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This thesis by Nora Donohue is accepted in its present form as  
satisfying the thesis requirement for the degree of Master of Science.

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### Abstract

Title of Thesis: FIRO-B PROFILES OF PHYSICAL THERAPY STUDENTS AND THEIR PERFORMANCES IN CLINICAL EDUCATION

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The purpose of this research was to determine if there was a relationship between physical therapy students' personalities and their preferences in clinical education. Associated problems addressed by the research were to determine if there were differences in personality measures between the physical therapy students as well as differences from one another in how they rank ordered a list of clinical education methods and behaviors.

Thirty-four senior physical therapy students who had completed the academic and clinical requirements of the curriculum rank ordered a list of twenty clinical education methods and behaviors which was compiled from factors cited in the literature. During the same session, they also completed the Fundamental Interpersonal Relations Orientations - Behavior (FIRO-B) Questionnaire.

A master list of the mean ranks of the clinical education preferences was calculated and examined for content. The students seemed to prefer behaviors which were passive and related to communication and security. Non-metric three-dimensional

multidimensional scaling procedures were used to examine whether there were clusters of students near any of the clinical education behaviors and to interpret similarities and differences between the clinical education methods and behaviors. Continuums between active and passive behaviors, student or professional behaviors, and needs for security and communication were identified along with some clusters of related clinical behaviors; there were no different clusters of students. Multiple analysis of variance and canonical correlations computed showed no significant relationship between the manner by which the students rank ordered the list of behaviors and their FIRO-B scores.

Profiles for the student group based on their FIRO-B scores in each of the need areas were described and discussed. The group demonstrated moderate to high needs for affection and inclusion and low needs in control. Describing the entire group based on the mean scores was potentially misleading as there was much variability between students except in the area of control. The implications of the personality profiles was discussed related to stability and normative scores, the admissions process, and professional development.



## CHAPTER I

### PURPOSE AND DEFINITIONS

#### Introduction

Clinical education is the essential and terminal link between the physical therapy student and the effective and competent professional. Early training programs were largely clinical and hospital based, but, as medical science and the practice of physical therapy advanced, programs became part of colleges and universities where students were able to study the necessary background in the science and theory of physical therapy procedures before working in a clinical setting. Physical therapy programs now, for the most part, provide the foundations of practice and then relinquish the students to clinical centers for the terminal phase of learning, the application of principles and procedures with patients. Clinical sites may be quite distant from the educational facility and the schools must depend on the clinics to provide appropriate educational experiences, accurately evaluate students, and to assist in determining whether the student is qualified to begin professional practice.

Much attention has been directed to the clinical education process: characteristics, development and evaluation of the clinical site and instructors; methods of evaluating students; and factors that influence learning. This concern perhaps stems from the fact that students leave

the protective umbrella of the educational institution and the school needs mechanisms to help them control and assure adequate continued education in the clinical sites. While student achievement in the classroom can be readily evaluated by the school, students may perform quite differently in a clinical setting. The transition from classroom to clinical learning involves a change in emphasis from demonstrating cognitive knowledge towards integrating cognitive with psychomotor and affective skills. In a classroom setting the student may play a relatively passive role but clinical education requires much participation in interpersonal communication with clinical instructors, patients, family members, and other health professionals. Thus, the educational program, in its attempt to guarantee that its students possess acceptable levels of competence before completing all educational requirements, needs procedures that will effectively assist them in evaluating clinical sites as well as student performance.

Once acceptable clinical education sites have been identified, students may be assigned to them using methods that may include lottery, personal needs and requests, and faculty recommendations. The broad goal is for the students to have opportunities to develop and demonstrate skills in the application of various physical therapy procedures. Since the students may be placed in unfamiliar settings, they must become acquainted with new people and procedures in addition to devoting their time to developing and refining professional skills. Stresses associated with changing from a comfortable and predictable setting, the classroom, to one unfamiliar, the clinic, may affect both learning and performance. Students who have not exhibited cognitive or behavioral problems at school may demonstrate inappropriate professional

conduct or the lack of ability to apply their knowledge clinically. Students adapt differently and problems in a clinical setting may be related to their personalities and the style of the clinical education facility. Students can be assigned to clinics according to their educational needs and personal preferences but they also should be compatible with the facility in order to maximize their ability to learn and perform.

This investigator became interested in pursuing whether students could be measured in terms other than cognitive and whether this information might have potential for improving the process of assigning students to diverse clinics for that phase of their education.

#### Purpose of the Study

The literature relevant to clinical education in medical fields is abundant and much attention has been devoted to effective versus ineffective instructional behaviors. Many of these behaviors are related to interpersonal factors. No studies were located which investigated student personalities or the compatibility between the individual student and a clinical education setting. This study was conducted for the purpose of investigating whether student personality was related to the way students rank ordered a list of clinical education characteristics.

#### Statement of the Problem

This research proposed to investigate whether interpersonal behavior characteristics measured by a standard personality test, the FIRO-B, could be used to help interpret physical therapy students' preferences in clinical education methods and behaviors.

### Subproblems

1. The first subproblem was to determine whether physical therapy students differed from each other on the FIRO-B measures of expressed and desired affection, control, and inclusion.

2. The second subproblem was to determine if physical therapy students differed from each other in how they rank ordered their preferred methods and behaviors in clinical education.

### Research Questions and Hypotheses

1. What are the frequency distributions of physical therapy student scores on the six FIRO-B scales?

2. Where are the students placed amidst ranked clinical education methods and behaviors in a multidimensional space?

Hol: Based on the scores on the FIRO-B, physical therapy students will not demonstrate significant differences between each other in how they rank clinical education methods and behaviors.

Ho2: The canonical correlations between the variables of the coordinates of the clinical education methods and behaviors in a three dimensional space and the physical therapy students' FIRO-B scores will be zero.

### Assumptions Made in the Study

1. The FIRO-B assesses interpersonal needs for affection, inclusion, and control; expressed towards others and desired from others.

2. The list of clinical education methods and behaviors represents factors considered important by students in the process of their clinical education.

3. Interpersonal needs and orientations are important in the clinical setting.

4. Students honestly completed all questionnaires.

#### Scope and Limitations of the Study

1. The sample size was small and included students from only one educational program which may not be representative for the population of physical therapy students.

2. Retrospective rank ordering clinical education methods and behaviors may not reflect student attitudes prior to their experiences and thus may not be useful prospectively.

3. Physical therapy students' scores on the FIRO-B may change over the duration of clinical education periods thus also limiting their usefulness prospectively.

4. Didactic learning or clinical performance were not evaluated.

#### Definitions of Terms

1. FIRO-B (Fundamental Interpersonal Relations Orientation - Behavior): a questionnaire measuring six aspects of self-perceived interpersonal behavior. Each area has two components, that expressed towards others and that desired from others. The three categories of interpersonal behavior are:

a. Inclusion: the need for association and interaction with others (Schutz, 1966).

b. Control: the need for dominance in relationships (Schutz, 1966).

c. Affection: the need for establishing relationships of love and intimacy (Schutz, 1966).

2. Clinical education: that portion of a student's education which involves practice and application of classroom knowledge and skills to on-the-job responsibilities. It is primarily a participatory experience (Moore & Perry, 1976).

3. Clinical education methods and behaviors: factors cited by health education students in the literature as being important to their clinical education. These factors may be related to a clinical center's environment including the personalities of the clinical instructors; attitudes demonstrated by staff towards other professionals, students and patients; teaching styles of clinical instructors; and student's learning styles, entry knowledge and commitment to the educational experience (Moore & Perry, 1976).

4. Multidimensional Scaling (MDS): a class of techniques that treat similarities and differences of data creating a spatial representation of each item related to each other item. Distances between items can be measured in this space and the data can be analyzed for "hidden structure" (Kruskal & Wish, 1978).

#### Organization of the Remaining Chapters

Chapter II presents a review of the literature related to the research questions and problems outlined in this chapter. The methods and procedures used in this investigation are provided in Chapter III. Chapter IV contains the results of the investigation including interpretations, conclusions and recommendations for future research. The final chapter is a publishable article based on some of the results from this investigation.

## CHAPTER II

### REVIEW OF THE LITERATURE

Chapter II is divided into three sections. The first contains a review of literature related to characteristics of physical therapy students, the second section investigates reports on clinical education, and the final section will discuss the FIRO-B theory of interpersonal needs and relevant research. A summary follows the three sections.

#### Characteristics of Physical Therapy Students

This first section will present reviews of reports on personality, attitudes, and learning styles of physical therapy and other allied health professions students. The intent is to describe various similarities and differences within and between groups where general characteristics of physical therapy students were investigated.

A recent profile of active members in the American Physical Therapy Association (American Physical Therapy Association, 1982) reported that 72 percent of the members were female with a mean age of 35 years. Almost 43 percent worked in hospitals, 11 percent in private practice, and between 7 and 8 percent each in rehabilitation centers, nursing homes, home health, and school systems. Of the members working full-time, 65 percent were salaried employees and 13 percent were self-employed. Male members were more likely to be self-employed, work full-time, and had larger incomes than the female members.

In the early 1970's, the American Council of Education completed a study of characteristics of students aspiring to health related careers (Holstrom, 1975). The report included a survey of over 13,000 freshmen students, 87 percent of them female, who planned to pursue a career in speech, occupational, or physical therapy. Besides gathering demographic information, the study investigated attitudes and values of the aspirants. These individuals were described as being artistically inclined, wanting to help people in difficulty, socially self confident, and understanding of others. They indicated little interest or importance on earning money, being successful in business, having administrative responsibilities, or prestige. Ranking second to physician-aspirants in academic achievement, they rated themselves low on mathematical and mechanical ability.

Another study conducted at one university in the Northeast investigated health professional students' personality profiles, work values, and background demographics (Dietrich, et al, 1977). Junior and senior students majoring in medical technology, occupational, or physical therapy voluntarily completed the questionnaires which included the FIRO-B and Work Values Inventory. Compared to a control group of non-health professions students, the allied health students were significantly different in the senior year on the personality variables of wanted control, expressed control, and expressed affection; all scores being higher. Senior physical therapy students were described as having strong controlling needs as measured by the FIRO-B, with wanted affection and inclusion having the lowest emphasis. Generally, the junior physical therapy student's scores on the FIRO-B demonstrated a similar pattern of emphasis. On the Work Values Inventory, the



senior physical therapy students ranked working with associates, supervisory relations, and variety as most important; prestige, creativity, esthetics, and independence were the lowest ranked values. They also had the greatest intergroup interest in economic return which was ranked as their fifth most important value. The junior students ranked economic return tenth. This change in emphasis in financial rewards, from low in Holstrom's (1975) report of freshmen students to a higher emphasis shown with Dietrich's study, may indicate that students increasingly recognize and accept the importance of financial needs and rewards as they move closer towards professional employment.

At the University of Michigan, Wellock (1975) conducted a study examining differences between physical therapy students and students in 18 other academic disciplines. All of the groups were administered the Opinion, Attitude, and Interest Survey (OAIS) during their freshman year. The physical therapy students ranked either first or last in 6 of the possible 13 survey scores. Their scores indicated that they would tend to respond in a socially desirable manner, would not comply passively, would not accept inadequately explained statements, were high in social and emotional adjustment, but were the lowest scoring group in creative personality. The physical therapy students generally showed a greater interest in financial matters, power, people and human interactions than most of the other groups. Wellock stated that the OAIS differentiated physical therapy students from other student groups.

Rezler and French (1975) explored the relationship between learning preferences, personality types, and achievement of female students in six allied health professional programs at one educational institution. They constructed a Learning Preference Inventory (LPI) designed to

measure six factors they thought likely to be essential for learning in the allied health professions: abstract, concrete, individual, interpersonal, student-structured, and teacher-structured. The subjects were also categorized according to personality types as measured by the Myer-Briggs Type Indicator. On the whole, the groups scored higher on the concrete and teacher-structured factors measured with the LPI than on the others. However, the standard deviations on the scales tended to be rather large so the authors divided the groups according to high, medium, or low scores on each scale. Thus, for example, they found that 19 percent of the physical therapy students had high scores on the interpersonal scale while 11 percent scored low; and 22 percent highly preferred a teacher-structured setting as compared to 14 percent with a low preference for this. There was only one significant difference on the LPI mean scores for the six groups which was that medical technology students demonstrated a preference for student-structured learning. The authors concluded that individual differences among students in a professional group were more important than differences between groups.

Another part of this research project was to categorize the students according to the Myer-Briggs Type indicator which measures bipolar personality characteristics termed Extroversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perception. Rezler and French (1975) found differences between their subject groups as well as a large spread of the subjects within a group. The physical therapy students were located in 10 of the 16 possible categories with the majority of them in those categories which included extroversion, intuition, feeling, and judging. No further analysis of the

personality characteristics or any relationships to the LPI or achievement were reported in this study.

Physical therapy students surveyed nationwide demonstrated much similarity among themselves and differences from other student groups in learning styles (Payton et al, 1979). The Canfield Learning Styles Inventory was the instrument used to determine student learning preferences. Some of the scales on this inventory are relevant to interpersonal behavior while others relate to interest areas and preferred modes of learning. Organization, knowing and liking the instructor, specific detail about assignments, working with people, and direct experience were all rated highly by the physical therapy students. The authors found a high degree of congruence with instructional style preferences when they later surveyed physical therapy faculty (Payton et al, 1980). These self-reporting inventories appear intended to describe classroom behaviors in the ideal sense and no attempt was made to correlate reported preferences with learning or achievement. Hall (1970) referenced research on relationships between learning and the student's fit with his environment. He studied whether undergraduate students reported greater learning with high congruence between the teacher's style and their ideal instructor's style. He found that the actual teaching style was a better predictor of achievement than ideal style and suggested that students may lack awareness of how they best perform until faced with the situation. With respect to this, the physical therapy students' expressed preferred learning styles reported by Payton et al (1979) may reflect their experiences with physical therapy faculty (Payton et al, 1979) rather than their ability to discriminate their best learning style.

The results of these studies indicate that allied health professions students and those in physical therapy can be differentiated from other groups, at least within their own institution, on various personality, attitude, and learning styles inventories. A nationwide study on attitude, reported by Holstrom (1975) provides rather broad and vague information while the studies by Payton et al (1979, 1980) provide specific information about the learning styles of physical therapy students. The importance of human and interpersonal relations to physical therapy students is characteristically encountered in the variety of investigations reported here. There is a paucity of specific measurements of personality variables among physical therapy students from a spectrum of academic institutions and regions as well as research conducted to determine if personality variables are related to learning styles. All of the studies reported here are related to general characteristics of the students and learning in the traditional sense, which is probably the classroom. Investigations of characteristics, similarities, and differences in clinical training situations should also be addressed. This will be the focus of the next section.

### Clinical Education

The largest body of research in clinical education lies within the arena of medical education. Reports in physical therapy clinical education are primarily descriptive and similar in general content to the medical education reports. This section will concentrate on medical education literature with final references to physical therapy.

After carefully reviewing literature on clinical teaching behaviors, Stritter and Associates (1975) formulated a list of 77 items

mostly described as being effective. Medical students at two universities completed a questionnaire which used a five point scale to rank the significance of these items in facilitating clinical learning. The authors ranked the top 16 items according to mean response scores. A perceived interest in students and accessibility of the instructor were characteristic of the most popular behaviors. Then, the data were further analyzed to identify dimensions of effective clinical teaching which revealed six factors. The top rated factor was providing the student an environment within which he could be an active participant and interact with the instructor. Other factors identified were, in order of importance, exhibiting a positive attitude toward teaching and students, concentrating on problem-solving, using a student-centered approach, being humanistically oriented, and emphasizing reading and research. Stritter and Hain (1977) have used these results to develop workshops for clinical instructors but have yet to report the effectiveness of their workshops.

In an earlier study, Cotsonas and Kaiser (1963) devised a teacher rating scale to obtain medical student opinion about aspects of clinical instructors. Submitted to factor analysis, the scale revealed three main factors which were attitude, teaching, and teacher's knowledge. Of these, attitude, which reflected affective and social merits, was slightly more important than the teaching factor which was more task oriented and cognitive. Teacher knowledge was relatively unimportant to the students.

In another study conducted with medical students, Irby and Rakestraw (1981) found that being enthusiastic and providing clinical supervision were the strongest correlates of overall clinical teaching

effectiveness. They identified four clinical teaching factors useful for evaluating instructors. These four factors were supervision skills, knowledge and clarity, interpersonal relations, and demonstration of clinical skills. Gjerde and Coble (1982) conducted a study similar to the one reported by Stritter et al (1975) using a group of family practice residents. Their findings were that two-way communication, setting the environment to facilitate learning, and providing feedback were effective clinical teaching behaviors.

The perceptions of family practice residents for effective clinical teachers was investigated by Stritter and Baker (1982). Not surprisingly, residents rated their "ideal" instructor similarly to the one with whom they reported being the "best" in actual experience. Factors considered important in clinical teaching were similar to those cited above (Stritter et al, 1975, Cotsonas & Kaiser, 1963, Irby & Rakestraw, 1981, Gjerde & Coble, 1982). Cluster analysis identified three types of residents differing in how they responded to the teacher rating questionnaire, the clusters were formed based on the intensity of the residents' responses. These groupings, however, were not considered to be useful in distinguishing response profiles and learner preferences.

Investigations of effective and ineffective teaching behaviors in nursing education were reported by Jacobson (1966). Using critical incident reporting methodology, behaviors were categorized in the areas of availability, general knowledge and competence, interpersonal relations, teaching practices, personal characteristics, and evaluation practices. Skills that were technical and personal were identified in each category. Since nursing educators are usually active in both a

classroom and clinical milieu, this study did not discriminate as to where the teaching being described took place. Nevertheless, the behaviors described were quite similar to those found in the medical education studies.

Summarizing these reports which span 20 years in contemporary medical education, different factors have been identified as being important to students in the clinical setting. These generally address communication skills, interpersonal behaviors, supervisory skills, and technical abilities. Research conducted with different groups of medical students and residents demonstrates that they have common concerns and preferences in clinical education. There appears to be a greater desire on the students' parts for instructors who have good interpersonal and communication skills than for technical expertise. Differences discovered between students by Stritter and Baker (1982) were related to the intensity of responses, not to their preferences.

A project was undertaken by the American Physical Therapy Association in 1974 to describe and analyze the process of clinical education in physical therapy and to develop guidelines for future development within clinical education and methods for evaluating the process (Moore & Perry, 1976). The project was based at the University of North Carolina at Chapel Hill (UNC-CH) and secured data from educational programs and clinical centers nationwide as well as from a number of new graduates. Included in the report were recommendations related to the development of clinical sites, faculty, and learning objectives. Factors considered to be important in the clinical education process were related to the centers and individuals involved with teaching students. Effective behaviors of clinical instructors

were identified and rated by new graduates, clinical instructors and Academic Coordinators of Clinical Education (ACCE). Those factors most highly rated by the new graduates included giving regular feedback, having a positive attitude towards teaching, allowing the student to "try out his wings", and conferring on a one-to-one basis with the student. Among the lowest rated behaviors were having an emphasis on problem-solving and being well-read and knowledgeable of research. The clinical instructors rated the items similarly with a slightly higher score given to problem-solving while the ACCEs rated this factor even higher but well below the emphasis given to providing feedback and having a positive attitude to teaching. Many of the skills and behaviors examined in the UNC-CH Report are related to communication skills, confidence, enthusiasm towards teaching, and technical skills. Similar to the research conducted in medical education were the findings that communication and interpersonal skills were considered to be more essential than technical expertise or a research emphasis. The UNC-CH report also recognized that the atmosphere of the clinical center had a large effect on learning, as did the student's preparation and attitudes. Flexibility was stressed as being a crucial element for optimal learning experiences.

While there have been studies on learning styles and personalities in physical therapy and other allied health students, there is some evidence that the academic setting plays a lesser role than the clinic in the development of the student's professional identity.

Jacobson (1974) sought to determine how new physical therapist graduates described themselves, their model clinical instructor, and their model classroom instructor; all of them female. This was done using Q sorts



which described favorable professional characteristics of both affective and technical natures. The sample studied identified more closely with their clinical models and many personal qualities such as age, being a person, woman, or friend were included in this identification.

Jacobson (1978) published a later report which detailed the characteristics of the role models. Again emphasized were the personal qualities of the clinical instructor which included demonstrating care and concern for patients and having good rapport with others.

Technical characteristics, such as being well informed and having up-to-date skills were also ranked highly. This study investigated identification with professional behavior and not effective teaching behaviors but it is apparent from this report that the new or student physical therapist aligned herself more closely to the clinical practitioner so behaviors respected as being effective clinical teaching behaviors may also have impact on professional development and may play a vital role in the new therapist's future interest and satisfaction with the field.

The reports cited in this section indicate that interpersonal needs and skills are important in physical therapy clinical education as well as the process of professional identification. Based on the results of these findings, the use of an instrument which measures interpersonal orientations seemed reasonable for studies related to clinical education. A description and the use of one such instrument will be discussed in the final section of this chapter.

#### FIRO-B Theory and Relevant Research

Schutz (1966) postulated that all individuals have three interpersonal needs: inclusion, control, and affection. Inclusion was

defined as needs for satisfactory interactions and associations with people, control as needs for power and decision making, and affection as the needs for relationships involving love and intimacy. Each of these was further defined as the amount one wants from others and the amount one expresses towards others. He believed that these three needs constituted a sufficient set of behavioral areas for the prediction and explanation of interpersonal relationships. His test instrument, entitled Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B), evolved from a series of tests and studies and is accepted as a tool which can be utilized in research on the subject of interpersonal needs and behavior (Bloxom, 1972). Content validity is considered to be a property of legitimate Guttman scales such as the FIRO-B and concurrent validity has been investigated with the results summarized by Schwartz (in Schutz, 1978). The primary purposes of the FIRO-B are to measure how individuals act in interpersonal situations and provide an instrument with predictive qualities that might explain how people interact. This latter quality, as well as the ease of administration and interpretation, has led to its widespread acceptance and consideration as a potentially useful tool for this research in clinical education. Interpretation of the test score is facilitated by the use of a format and guide devised by Ryan (1977).

Applications in research using the FIRO-B have been many and varied. Normative scores for different occupational groups have been reported (Schutz, 1978). In this respect, for example, people in occupations such as architecture and antarctic exploration which require introverted activity, score low in interpersonal needs while high personal contact occupations, such as salesmen and businessmen, attain

high overall scores. Patterson et al (1970) used a sample of 114 occupational therapy sophomores at one university to compile normative data on the FIRO-B and compare this group to Schutz's (1978) data for Radcliffe freshmen females, psychology majors, and teachers. The authors hypothesized that there would be no significant differences between groups since the subjects were comparable either for sex or academic inclination. The occupational therapy students had moderate scores in all of the needs dimensions except for their mean expressed control score which was low. They found that their sample was most similar to the psychology students and most different from the teachers. Since there were significant differences on some of the FIRO-B scales, the authors concluded that the instrument was sensitive in discriminating the interpersonal behavior of specific groups. In physical therapy, only scores for students at one institution have been reported (Dietrich et al, 1977). These students had moderate needs in expressed inclusion, moderately low scores in wanted inclusion, and expressed and wanted affection and relatively high scores in both dimensions of control.

A congruency hypothesis, where it is thought that individuals might demonstrate better achievement and more satisfaction when working with similar people was the basis for a research report by Posthuma and Posthuma (1973). They anticipated that occupational therapy students who had profiles on the FIRO-B similar to those of the faculty would achieve better grades and that all students' interpersonal profiles would shift towards being more like the faculty over time. The students were divided into top and bottom groups based on grades and completed the FIRO-B at the beginning and end of an academic quarter.

Interestingly, the results were the opposite of what the authors expected with the congruency hypothesis. The top students were most different from the faculty and this difference increased over time, while the bottom students shifted towards being like the top students. These results surprised the authors but perhaps demonstrate that the better students served as role models for the others and that the students became more cohesive and congruent with each other in order to survive rigorous academic demands. The student scores on the FIRO-B were significantly different from the normative scores reported by Patterson et al (1970) in the areas of expressed inclusion and wanted control and affection. Thus, any assumptions made about occupational therapy students interpersonal needs should be cautiously made based on "normative" data from one institution.

This 1973 report by Posthuma & Posthuma was apparently not designed to be their original study project. In 1972, they published the results of a study evaluating structured small group experiences designed to enhance occupational therapy students' personal development. Twenty junior students were randomly divided into two groups with one participating in the group sessions while the other served as a control. The control group then underwent the same group experiences. FIRO-B scales were obtained at the beginning and end of each group session from all students. The intervals for data collection were approximately six weeks. The authors hypothesized that the participants would gain social skills following the small group sessions and would show increases on their FIRO-B scores. The first group did have significant increases in expressed and wanted inclusion and expressed control following the third administration of the test; the control group

changed only in wanted affection. Although not discussed in this article, the groups appear to be different in some of the scales on the first test administration and more alike on the third. Whether the changes were due to the small group experiences, academic cohabitation, or some kind of learning associated with repeated administration of the FIRO-B are difficult to determine.

A relationship was found between interpersonal behaviors of teaching residents and their levels of confidence as instructors (Jewett et al, 1982). The group studied were pediatric residents who participated in clinical teaching workshops; the FIRO-B was administered prior to the workshops. Moderate to high expressed control needs, moderate wanted control, and high wanted affection were associated with teacher confidence and positive feedback from the learners.

Compatibility is another area studied using the FIRO-B. The instrument was used to measure compatibility between psychiatric residents and supervisors (Wolkon et al, 1978). The residents completed the personality profile at the beginning and end of their second year of training and compatibility dyads were computed based on score reciprocity and interchange. These were compared to a measure of satisfaction with the resident-supervisor relationship that the residents completed. No consistent results were found. There were, however, significant initial differences between the residents and supervisors on some of the FIRO-B scores which disappeared at the second test administration with the exception that the residents' wanted inclusion scores became significantly lower than the supervisors. The general finding was that initially the residents had high expressed affection and wanted inclusion scores, both plausible emotions for

people entering new situations and that these needs diminished over time as the residents became comfortable in the setting.

Liddell and Slocum (1976) conducted a study using male undergraduate students who, after completing the FIRO-B, were assigned to groups with compatible, incompatible, and random conditions as determined by the dimensions of expressed and wanted control. Thus, a compatible group had a leader with high expressed and low wanted control while the other group members had reverse control needs. The incompatible group leader had low expressed and high wanted control scores with the others having the opposite and the random group was assigned without regard to their FIRO-B scores. Each group was asked to solve a series of common symbol identification problems. The research hypothesis was that the compatible group would need less time and have fewer errors than either the incompatible or randomly assigned group. This, indeed, was the result, with the most effective task completion demonstrated by the compatible group, then the random group, followed by the incompatible group. The subjects assigned roles incongruent with their accustomed behavior evidently had trouble adapting to the requirements imposed by the research situation.

Another study investigated the achievement of goals by teams or dyads of middle managers (Reddy & Byrnes, 1972). Using a decision-making and problem solving task, the group more compatible in terms of control and affection was able to work more quickly while the control incompatible groups spent less time in planning the execution of the task. This study is noteworthy as the authors postulated that training individuals in interpersonal relations may have minimal value on group performance but that team performance may be enhanced by

directing attention to a group's interpersonal composition. They suggested that further study which manipulated team composition rather than changing the characteristics of the individuals might be of value.

In contrast to the results of Reddy & Byrnes (1972), Hill (1975) found that incompatibility among his study sample of systems analysts resulted in greater productivity on a task. The task he used did not involve a large amount of interdependence which led to his explanation that problems which did not lend themselves to group planning to solve were less likely to require compatibility of the individuals charged with the task. Using Hill's definition of interdependence, Lobitz & Shepard (1983) investigated the achievement of goals mutually-agreed upon by spinal cord injured patients and their physical therapists. Reciprocal compatibility scores were calculated for each dyad for the combined FIRO-B needs as well as each of the areas. Their hypotheses were that compatible dyads would have greater goal attainment than incompatible groups and that control and inclusion would have more impact than affection on achievement. Their results did not support these hypotheses and their findings were that dyads compatible in affection actually achieved fewer goals. Unfortunately, the small number of dyads in this study did not include any highly incompatible groups on the total scores and only few were incompatible in inclusion and affection, none in control.

In summary, the FIRO-B is an instrument that measures the interpersonal needs of inclusion, control, and affection wanted and expressed by an individual. There is some evidence that different occupations have different profiles on the FIRO-B but not enough research has been conducted with allied health professionals to

determine if there are norms for these professions. Research seems to have demonstrated that the FIRO-B may be sensitive to establishing the level of success a group will have completing an interdependent task and that compatibility in the control need is the most important factor in enhancing performance while compatible affection needs may hinder it (Reddy & Byrnes, 1972, Liddell & Slocum, 1976, Hill, 1975, Lobitz & Shepard, 1983). Changes in an individual's FIRO-B scores may be related to intensive interaction or the passage of time (Posthuma & Posthuma, 1973, Wolkon et al, 1978) but the trend appears to be that people who associate with each other and probably respect or like each other will eventually score more alike on the test with the more established individual having the scores less likely to change. Compatibility related to group or dyadic performance has been studied using the FIRO-B but not the interaction of a person with a specific setting or style of behavior as is found in different learning situations.

### Summary

In order to pursue research of the questions presented in Chapter I, a review of relevant literature was conducted. First sought were investigations related to allied health students' personalities and learning styles with an emphasis on locating information pertinent to physical therapy students. Then factors related to clinical education were identified. Finally, studies using the FIRO-B were reviewed. A strong relationship between interpersonal behavior and clinical education and professional development seemed evident. Chapter III will present the methods, materials, and procedures used in this study.



## CHAPTER III

### METHODS

#### Materials and Procedures

Chapter III discusses the methods, materials and procedures used in the study. This chapter is organized as follows: sample selection, selection of measurement tools, procedures, data collection and analysis, and a summary.

#### Sample Selection

The sample selected included all senior physical therapy students enrolled in the Department of Physical Therapy, School of Allied Health Professions, Medical College of Virginia, Virginia Commonwealth University. These students had all successfully completed their educational requirements within the standard time period and would graduate in July of 1981. Thirty-four students comprised the sample.

#### Selection of Measurement Tools

##### Clinical Education Methods and Behaviors

A list of 35 clinical education methods and behaviors was generated from a review of the literature in health education (Jacobson, 1978, Stritter et al, 1975, Moore & Perry, 1976). This list was submitted to five physical therapists experienced in clinical education with the request that they review the list and delete items they considered

redundant, invalid or inappropriate. With this input, the investigator compiled a list of 20 items which included both personal and technical qualities. This list is reproduced in Appendix A.

### Personality Test

The investigator reviewed several standard personality tests and selected the FIRO-B scales developed by Schutz (1966) who theorized that interpersonal behavior could be explained by three need orientations which he labelled inclusion, control and affection. Schutz further related these needs to the intensity one expresses towards others and to the amount one wants expressed towards oneself. The FIRO-B contains six basic questions presented with slight variations requiring a total of 54 responses. Each need orientation has a possible score of 0 to 9 which reflects the importance of each of the six behaviors. This test was selected because it appeared to be generally accepted, has been used in health care education, and because interpersonal behavior is an important component in clinical education. The test is also easily administered, scored and interpreted.

### Procedures

Senior students return to campus immediately following their clinical affiliations for a week which includes debriefing sessions, the State Board Examination, and graduation. They were asked to participate in the project which was scheduled during this week. All subjects agreed to participate and signed a Consent Form (Appendix B), completed the FIRO-B, and rank ordered the list of clinical education methods and behaviors according to their perceived preferences. These three items were stapled together for identification and were coded and

separated following administration to protect the subject's anonymity. One hour was needed to complete data collection.

### Data Collection and Analysis

Data collected on each subject included sex, age, the rank ordered list of clinical education methods and behaviors, and six scores on the FIRO-B scales.

Descriptive statistics including means and standard deviations of the subjects' ages and six FIRO-B scores were obtained and the rank orders of the clinical education methods and behaviors were averaged for the sample. Histograms of each of the six FIRO-B need orientations were constructed to display the range and frequency for the scores found in the sample. Ryan (1977) has published descriptions of individuals according to their combination of scores in the three areas measured by the FIRO-B and the subjects were sorted into each of the categories he described. Brief descriptions of all of these personality categories are provided in Appendix C.

Nonmetric multidimensional scaling (MDS) using SAS-ALSCAL procedures<sup>1</sup> was performed which placed the subjects in a theoretical three-dimensional place according to the manner by which they rank ordered the list of clinical education methods and behaviors. This was visually analyzed for "hidden structure" using accepted methods of examining proximities and distances (Kruskal & Wish, 1978). To test the hypotheses, multivariate analysis of variance using SAS-GLM<sup>2</sup>

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<sup>1</sup>SAS Supplemental User's Guide, 1980 Edition, SAS Institute, Inc., Box 8000, Cary, NC 27511

<sup>2</sup>SAS User's Guide: Statistics, 1980 Edition, SAS Institute, Inc., Box 8000, Cary, NC 27511

procedures were performed on the MDS coordinates and the FIRO-B scores and canonical correlations using SAS-CANCORR<sup>1</sup> were performed using the coordinates of the data points in each of the three dimensions and each of the six FIRO-B scores as variables.

### Summary

Thirty-four senior physical therapy students served as subjects in an investigation of whether measures of interpersonal behavior influenced the manner by which they rank ordered a list of preferred clinical education methods and behaviors. Group and individual characteristics for each of the instruments administered were also examined. Results and conclusions of this study are reported in the next chapter.

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<sup>1</sup>SAS User's Guide: Statistics, 1980 Edition, SAS Institute, Inc., Box 8000, Cary, NC 27511

## CHAPTER IV

### RESULTS AND CONCLUSIONS

Results and discussions for each of the procedures completed will be presented in Chapter IV. This chapter is divided into four sections: Student Profiles and FIRO-B Scores, Rank Ordering of Clinical Education Preferences, Multidimensional Scaling Procedures and Statistical Analyses, and Summary and Conclusions.

#### Student Profiles and FIRO-B Scores

The sample of senior physical therapy students was comprised of 30 women and 4 men; their ages ranged from 21 to 27 years with a mean age of 22.8 years and a standard deviation of 1.48 years. Subjects were from one educational program which has competitive admissions for its two year program leading to a baccalaureate degree. Students voluntarily agreed to be subjects for this study and data collection was completed in one session after the subjects had just completed all academic and clinical coursework.

As is often reported in other studies, the means and standard deviations for the FIRO-B scores are presented in Table 1. The scores for each of the six variables measured by the FIRO-B, expressed and desired inclusion, control and affection, can range from 0 to 9. Ryan (1977) interpreted the scores in terms of their intensity where 0

Table 1

## Subjects' Firo-B Scores

<u>Area</u>	<u>Range</u>	<u>Mean</u>	<u>Standard Deviation</u>
Inclusion - expressed	2 - 9	5.76	1.69
Inclusion - wanted	0 - 9	4.91	3.21
Control - expressed	0 - 9	2.03	2.30
Control - wanted	0 - 8	2.50	1.97
Affection - expressed	2 - 9	5.06	2.06
Affection - wanted	0 - 9	6.15	2.22

to 1 are extremely low, indicating a compulsive avoidance of the measured behavior, 2 to 3 as low, meaning the characteristic low need will be noticeable; 4 to 5 moderate or borderline with the person showing a tendency for either high or low scoring behaviors; 6 to 7 as high, the person will noticeably show the characteristic; and scores of 8 to 9 are extremely high, meaning there will be a compulsive expression for the behavior. These interpretations were formulated into characterizations for different personality types based on combinations of expressed and wanted scores for each of the three needs. Ryan assigned labels to these personality types to serve as memory aids only, he cautioned that interpretations needed to be made from careful study of his text (Ryan, 1977). His descriptive labels have been used in this discussion; Appendix C contains operational definitions for each of his categorizations of personality types.

When the sample is examined as a group, the mean scores demonstrate moderate needs in terms of expressed and wanted inclusion and affection and low needs in both components of control. Individual subject scores in each of the dimensions covered the entire range with the exception of expressed inclusion and affection where no subject had a score less than 2 and wanted control where the highest score was 8.

The range and frequency in the student's FIRO-B scores for the need areas of inclusion, affection and control are presented in Figures 1, 2 and 3 while the distribution of the sample into Ryan's personality characterizations are presented in Tables 2, 3 and 4. Using Ryan's schema of interpretation, one can characterize the student described by the mean scores as a "conversationalist, warm individual and rebel." A more comprehensive description of this type is someone who presents an

Figure 1

## FREQUENCY HISTOGRAM: FIRO-B AREA INCLUSION

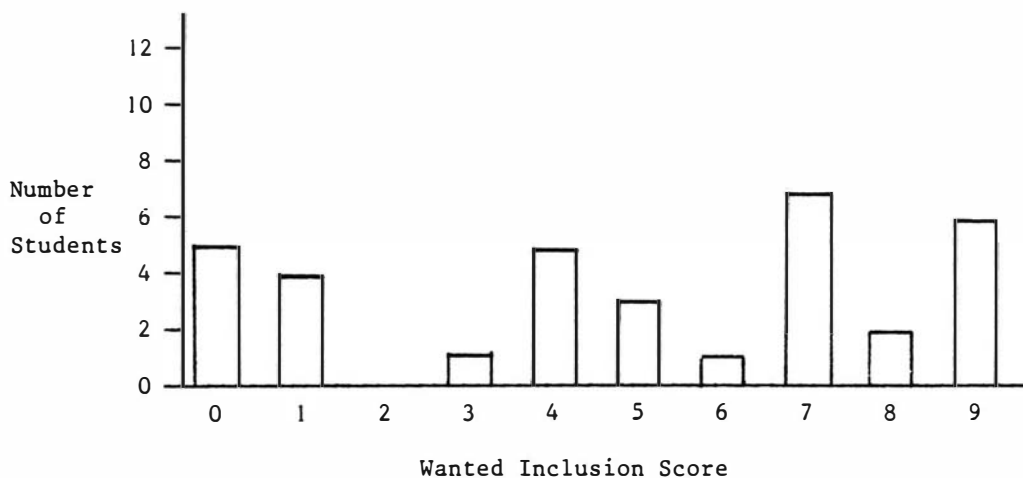
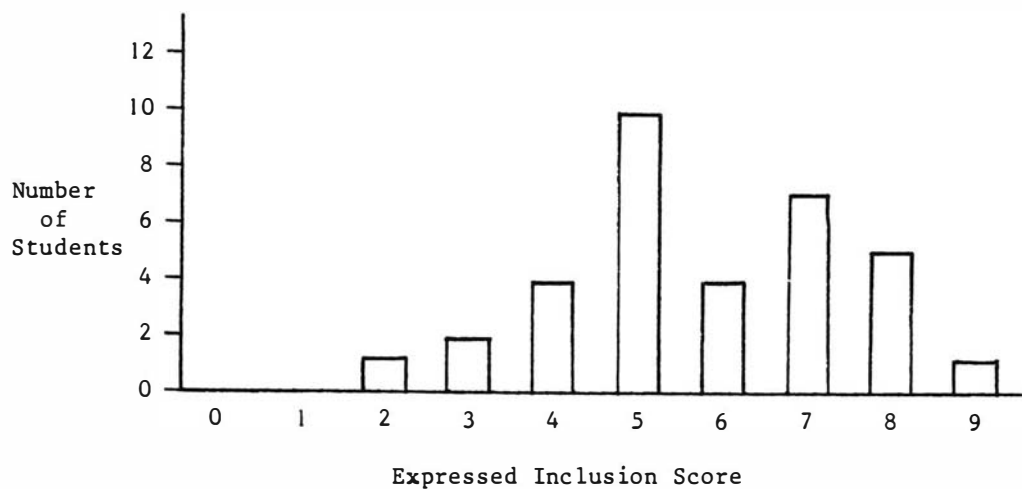




Table 2

Ryan's (1977) Personality Characterizations  
and Sample Distribution

FIRO-B Area: Inclusion

<u>Descriptor</u>	<u>Score Range</u>		<u>Number of Students</u>
	<u>Expressed</u>	<u>Wanted</u>	
Loner	0 - 3	0 - 3	1
Now Your See Him, Now You Don't	4 - 9	0 - 3	9
People Gatherer	6 - 9	6 - 9	11
Conversationalist	6 - 9	4 - 5	4
Inhibited Individual	0 - 3	6 - 9	1
Cautious Association	0 - 3	4 - 5	1
Hidden Inhibitions	4 - 5	7 - 9	2
Social Flexibility	4 - 5	3 - 6	5

Figure 2

## FREQUENCY HISTOGRAM: FIRO-B AREA AFFECTION

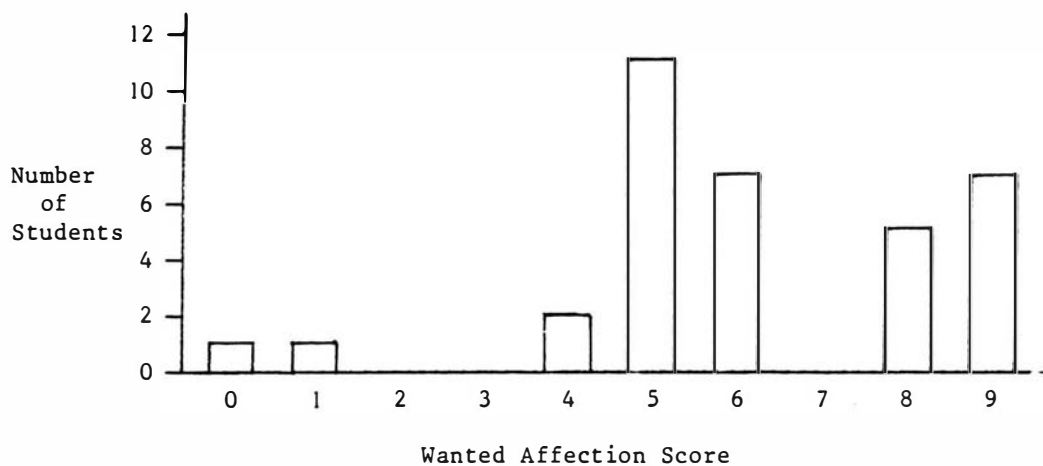
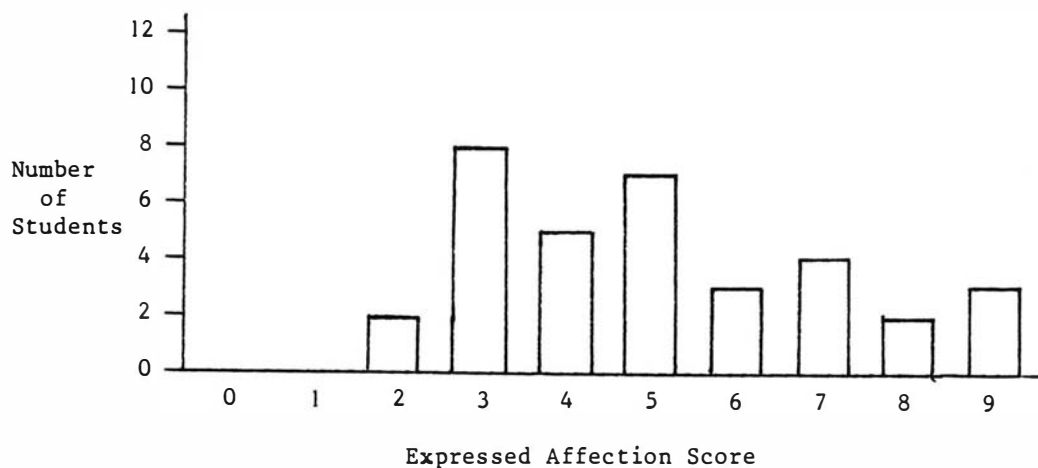


Table 3

Ryan's (1977) Personality Characterizations  
and Sample Distribution

FIRO-B Area: Affection

Descriptor	Score Range		Number of Students
	Expressed	Wanted	
Pessimist	0 - 3	0 - 3	2
Careful Moderation	0 - 2	4 - 5	1
Cautious Lover	0 - 3	5 - 9	7
Image of Intimacy Tendency	4 - 5	0 - 3	0
Warm Individual	4 - 5	3 - 6	10
Cautious Lover in Disguise	4 - 5	7 - 9	2
Image of Intimacy	6 - 9	0 - 3	0
Living Up to Expectations	6 - 9	4 - 5	2
Optimist	6 - 9	6 - 9	10

Figure 3

## FREQUENCY HISTOGRAM: FIRO-B AREA CONTROL

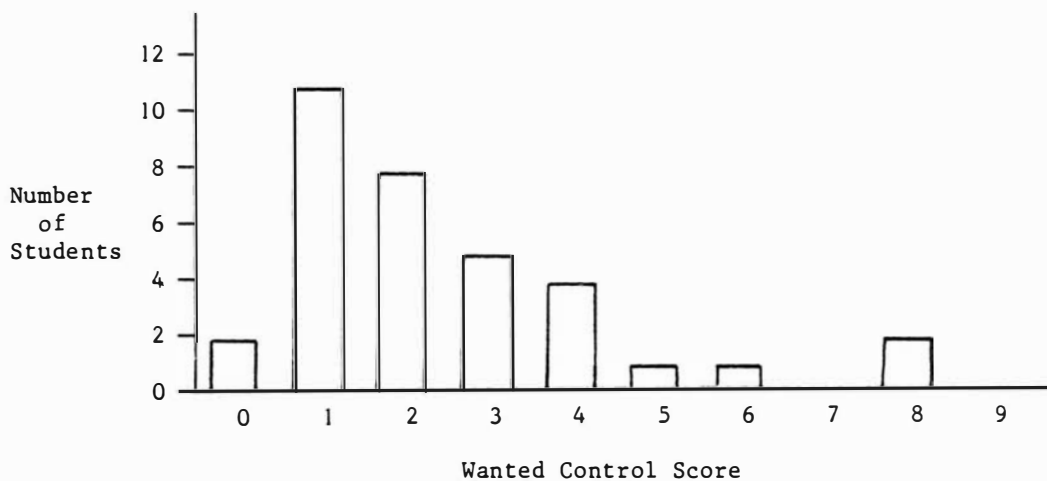
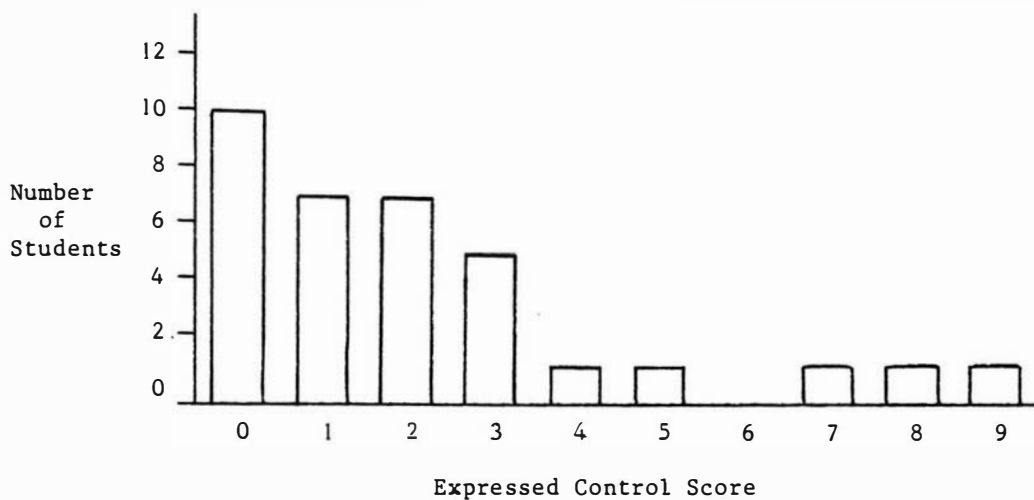


Table 4

Ryan's (1977) Personality Characterizations  
and Sample Distribution

FIRO-B Area: Control

Descriptor	Score Range		Number of Students
	Expressed	Wanted	
Rebel	0 - 3	0 - 3	23
Checker	0 - 3	4 - 6	4
Loyal Lieutenant	0 - 2	6	0
Openly Dependent Person	0 - 3	7 - 9	2
Self Confident	4 - 6	0 - 3	1
Matcher	4 - 6	3 - 6	1
Let's Take a Break	4 - 5	7 - 9	0
Mission Impossible	7 - 9	0 - 3	2
Mission Impossible with Narcissistic Tendencies	7 - 9	4 - 5	1
Dependent - Independent Conflict	7 - 9	6 - 9	0

image of gregariousness with well developed social and conversational skills, is capable of giving and receiving reasonable amounts of affection, and who avoids making decisions while not wanting control from others. This is how the sample would be described if only the mean scores were used. However, in two of the three interpersonal dimensions, inclusion and affection, the distribution of subjects into different categories indicates a substantial amount of variability. These results deserve further attention.

### Inclusion

Figure 1 presents frequency histograms for inclusion and Table 2 presents the distribution of the sample into each of the personality types described by Ryan. The largest number of subjects, 11, had both high expressed and wanted inclusion scores. This, according to Ryan is indicative of people who are somewhat compulsively driven towards others and find being alone rather difficult. The next largest number of subjects, nine, with moderate to high expressed and low wanted needs in inclusion, could be described as people skilled at socializing but without a strong need to constantly be with others and somewhat selective about with whom they choose to spend time. The rest of the subjects were distributed in the seven other categories. Of interest is that only four subjects had scores that fit the category described by the means of 5.76 for expressed and 4.91 for wanted inclusion.

### Affection

Figure 2 contains frequency histograms for expressed and wanted affection and Table 3 the distribution of the students into the different personality types. Ten students, described as capable of giving and receiving affection in a realistic and practical manner, had

scores in this dimension congruent with the mean. Another 10 had high or extremely high scores indicating an intense desire to be shown affection as well as initiating close relationships with others. Seven subjects had low expressed affection with high wanted scores; characterized by Ryan as being defensive, wanting others to take the responsibility for beginning relationships, and then needing constant reassurance that they are liked. The rest of the students in the sample were distributed, by themselves or in pairs, among the other descriptive groups.

### Control

Figure 3 presents frequency histograms for the control needs and Table 4 the distribution of subjects into each of Ryan's descriptive categories. While the students were placed into a variety of groups in the inclusion and affection dimensions, over two-thirds of the sample were placed in one category in control which was encompassed by the mean scores. These subjects had extremely low or low expressed and wanted control and are called rebels by Ryan. According to his interpretation, rebels may have doubts about handling new areas or responsibility, resist being pushed, and want to be certain about what they are doing to avoid feeling like fools. He further states that rebels may have good potential for leadership but need to move into new experiences and responsibility at their own speed. If stressed, rebels who also have high wanted affection scores may use passive-aggressive defenses rather than demonstrate open hostility or other coping mechanisms. Of the 23 students labeled as rebels, 13 also had high wanted affection scores. The 11 students not scoring low in the control dimension were distributed among six other descriptive

categories.

To summarize, the physical therapy students in this sample tended to score moderate to high in their interpersonal needs of affection and inclusion and low in control. There were 26 different combinations of scores in the three dimensions and only one student fit into the combination created by the mean scores. Although it is possible to characterize individual students using their FIRO-B scores, drawing conclusions about the group based on mean scores can be quite erroneous. That 23 subjects responded similarly in the control dimension is intriguing to the author and this will be discussed in the conclusions section of this chapter.

#### Rank Ordering of Clinical Education Preferences

Twenty characteristics of a clinical education setting were ranked by the students from most preferred to least preferred. The rank orders were summed for the group and are presented as averaged ranked preferences in Table 5. The original list was unnumbered but the characteristics were numbered following administration to facilitate statistical analysis. Table 5 presents the items in their ranked order with their original designation as well.

Ranking as most preferred were items related to supervision and communication. Being aware of a clinic's expectations, receiving feedback and guidance were most important, ranking in the top three for the group. The top five clinical education methods and behaviors seem to indicate that the students prefer to have the boundaries of acceptable behavior delineated and to be in a setting conducive to two way communication where the student felt free to initiate discourse when desired. These items seem to relate to an intrinsic need for security;



Table 5

## Ranked Preferences for Clinical Education Behaviors

Item	Rank	Original Number
Knowing what was expected of me	1	3
Receiving regular feedback on my performance	2	6
Receiving guidance when I wanted it	3	15
Feeling free to ask questions	4	8
Being able to work independently	5	20
Having a well prepared and knowledgeable instructor	6a	12
Feeling well prepared	6b	19
Having mistakes corrected without feeling belittled	8	11
Being with a staff interested in teaching students	9	17
Having an instructor who was confident and secure	10	2
Being treated like one of the staff	11	7
Having adequate time to treat my patients	12	4
Being able to try my own ideas with patients	13	18
Having an emphasis on problem solving	14	9
Observing a treatment or procedure before performing it	15	5
Feeling like I was an asset in the clinic	16	14
Being praised when I did something well	17	16
Having a large variety of patients	18	1
Having challenging questions asked me	19	13
Being able to pursue my own interests	20	20

that the students prefer to work independently but need to know that that's okay and that they can get help if they want it. Grouped, these five characteristics are relatively passive and impersonal when compared to the other items on the list. Although related to supervision and communication, they seem to reflect a preference for low levels of both and are more reactive than proactive. This is consistent with Ryan's description of people with low FIRO-B expressed and wanted control scores which the majority of the subjects had.

In contrast with the most preferred clinical education methods and behaviors, the lowest summed rank scores were for items which encompass different features. The sixteenth and seventeenth ranked items related to feelings of belonging and worthiness while the lowest three items reflect the relative lack of importance of having a large variety of patients, being asked challenging questions, or pursuing personal interests. These lowest ranked items differ from the most preferred characteristics in that they are more proactive and imply needs for recognition of individual status and personal control; there is less emphasis on passive security.

Reviewing the entire list of clinical education behaviors, one can see a progression where the student prefers to remain relatively anonymous and secure in the most highly ranked items to feeling like part of the clinical staff and recognizing the role of the clinical instructor to being able to demonstrate knowledge and skills by responding to questions and being in control with respect to patient care and personal interests. The standard period of time that each student spent in a clinical education facility was eight weeks and perhaps this duration was too brief for students to consider these

latter characteristics important. Their priorities during their clinical affiliations may be knowing the requirements of the task at hand and being able to carry them out in a nonthreatening atmosphere. Also, since the duration of their stay within each clinical setting was limited, the students may recognize that their transience precluded fulfilling any needs for feeling like part of a staff and developing their own patient care strategies and interests. There is more potential threat involved with actively belonging and asserting personal needs rather than simply reacting to the expectations of the clinic as the student must be willing to reveal possible weaknesses in their knowledge and skills in order to more actively interact with the staff and patients.

Since there was a large variety of personality types measured by the FIRO-B in the student sample but one large group in the dimension of control, the investigator was curious if there were any differences in how students low in control, the rebels, ranked the list of clinical education methods and behaviors in comparison to those students not in the rebel category. Differences found after examining the ranked preferences between these two groups were that working independently ranked fifth for the entire sample but was ranked first with those students not in the rebel category and ninth by those who were. Having a well prepared and knowledgeable clinical instructor, the sixth ranked item for the sample, was preferable, ranking fifth, to those with low control scores and ranked twelfth by the others. The other clinical education methods and behaviors were similarly ranked by these two groups.

In summary, the rank orders of clinical education methods and

behaviors were averaged for the sample. The items ranked as most preferred were relatively passive and related to needs for anonymity and security within the clinical setting. Being treated like part of the staff, being challenged and pursuing one's interests were relatively less important. There would appear to be some differences in how the students rank ordered their preferences and this will be examined in the next section.

### Multidimensional Scaling Procedures and Statistical Analyses

Multidimensional scaling (MDS) was used for further analysis of the students and the rank ordered clinical education preferences. Techniques for this procedure use proximities among the input stimuli. Thus, MDS placed each student in a euclidean space based on the manner by which they rank ordered the clinical education methods and behaviors. SAS-ALSCAL<sup>1</sup> was used for ordinal data with three dimensions selected to simplify and facilitate interpretation. A graph depicting the three dimensional plotting is presented as Figure 4. The numbers around the perimeter are the original designations of the clinical education behaviors and the dots near the center represent the students.

Proximities of stimuli in euclidean space created through the use of MDS can be visually analyzed for "hidden structure" (Kruskal & Wish, 1978). Two acceptable methods of visually interpreting data in MDS are to examine clusters of stimuli or draw lines in the space created between stimuli which show apparent and describable differences from each other. In both instances, stimuli which are near to each other

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<sup>1</sup>SAS Supplemental User's Guide, 1980 Edition, SAS Institute, Inc., Box 8000, Cary, NC 27511

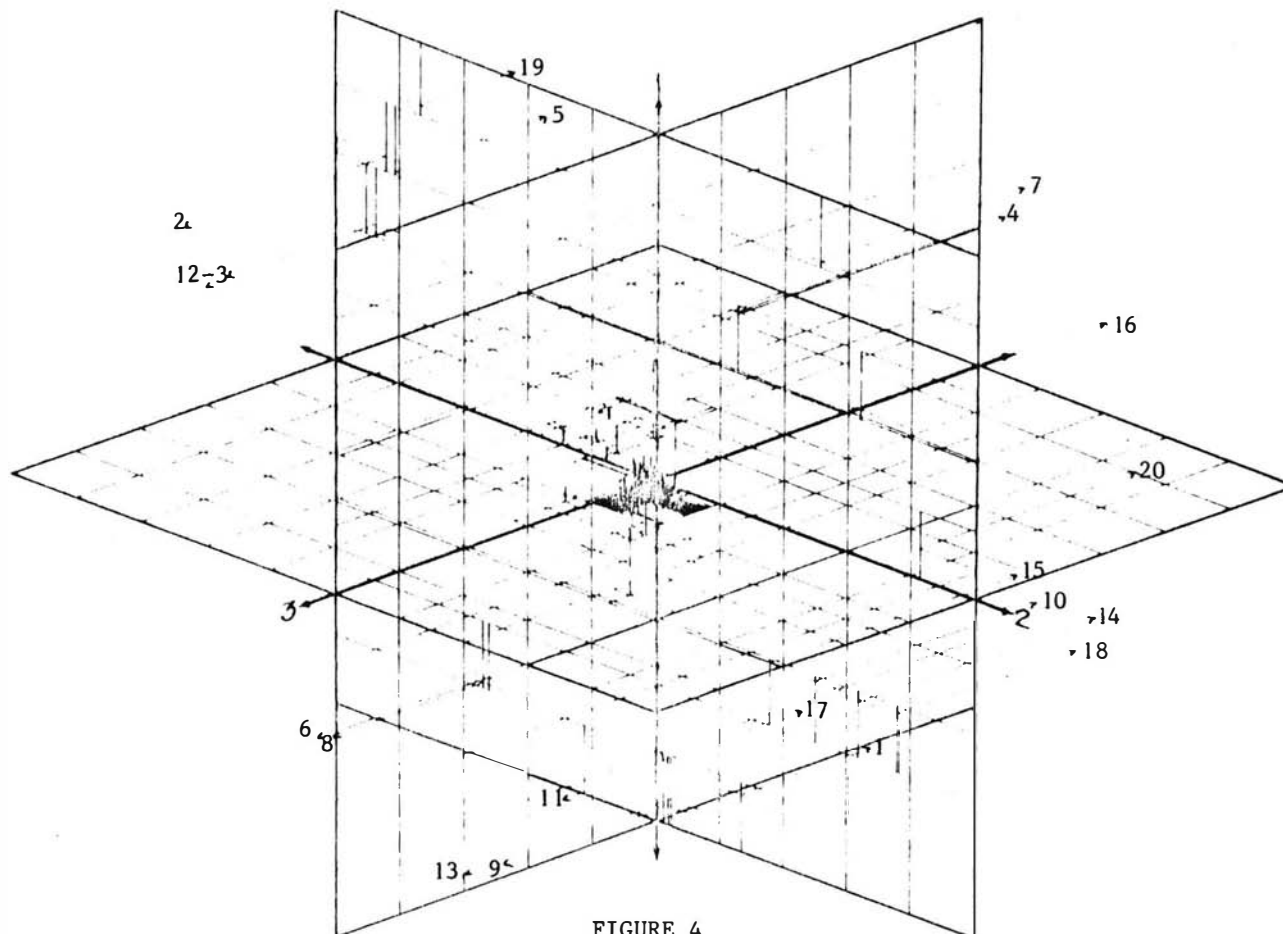


FIGURE 4

THREE DIMENSIONAL PLOTTING OF STUDENTS (DOTS) AND  
CLINICAL EDUCATION METHODS AND BEHAVIORS (ORIGINAL DESIGNATION NUMBERS)

can be considered "similar" while those at some distance are "dissimilar". The coordinate axes may be rotated when examining an MDS plot and lines may or may not intersect at 90 degree angles.

Since visual interpretation of plots of more than two dimensions may be difficult for the reader lacking skills in spatial imagination, two dimensional plots of the clinical education stimuli with the students deleted are presented in Figures 5 - 10 and will be discussed before returning to the three dimensional depiction in Figure 4. Brief descriptors are provided next to the clinical education behaviors or they are labeled by their rank number. Each of the three configurations created by MDS, dimension (dim) 1 versus dim 2, dim 1 versus dim 3, and dim 2 versus dim 3 are presented using two figures each to facilitate and explain the interpretation.

First, looking at Figure 5, a number of possible clusters may be identified. These are restated below with suggested explanations of the relationship.

<u>Cluster</u>	<u>Relationship</u>
2-regular feedback 4-free to ask questions	free communication, low-risk
14-emphasis on problem solving 19-asked challenging questions 8-corrected without belittling 9-staff interested in teaching 18-large variety of patients	emphasis on thinking, knowledge teaching behaviors, student participation
3-guidance when wanted 5-work independently 13-try own ideas 16-asset to clinic	non-directed, self confidence and worth
6a-prepared, knowledgeable instructor 1-know expectations 10-confident and secure instructor 15-observe before doing	dependence, onus on instructor

FIGURE 5  
LOCATION OF CLINICAL EDUCATION ITEMS  
DIM 1 x DIM 2

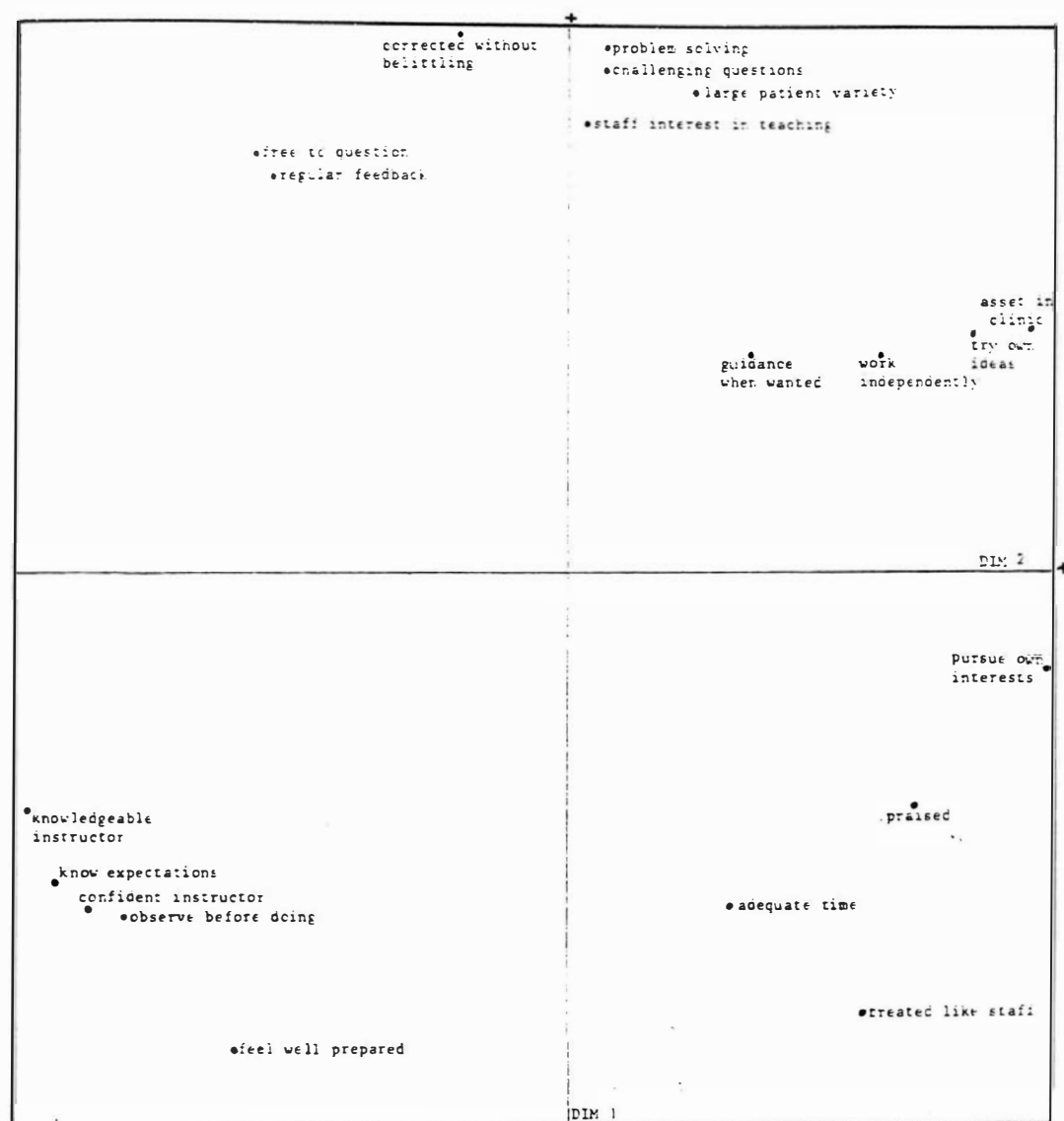


FIGURE 6  
CLUSTER AND DIMENSION INTERPRETATIONS  
DIM 1 x DIM 2

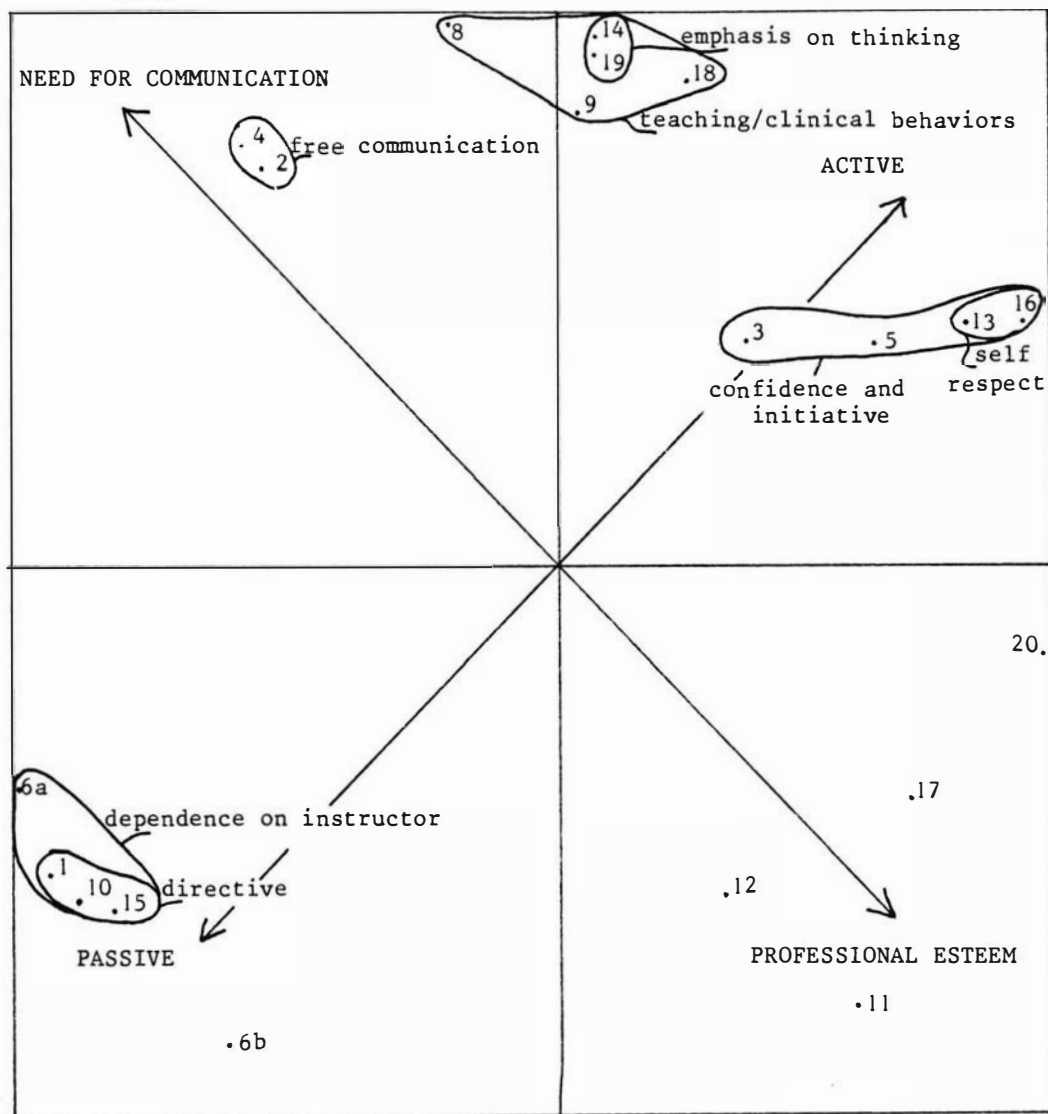




FIGURE 7  
 LOCATION OF CLINICAL EDUCATION ITEMS  
 DIM 1 x DIM 3

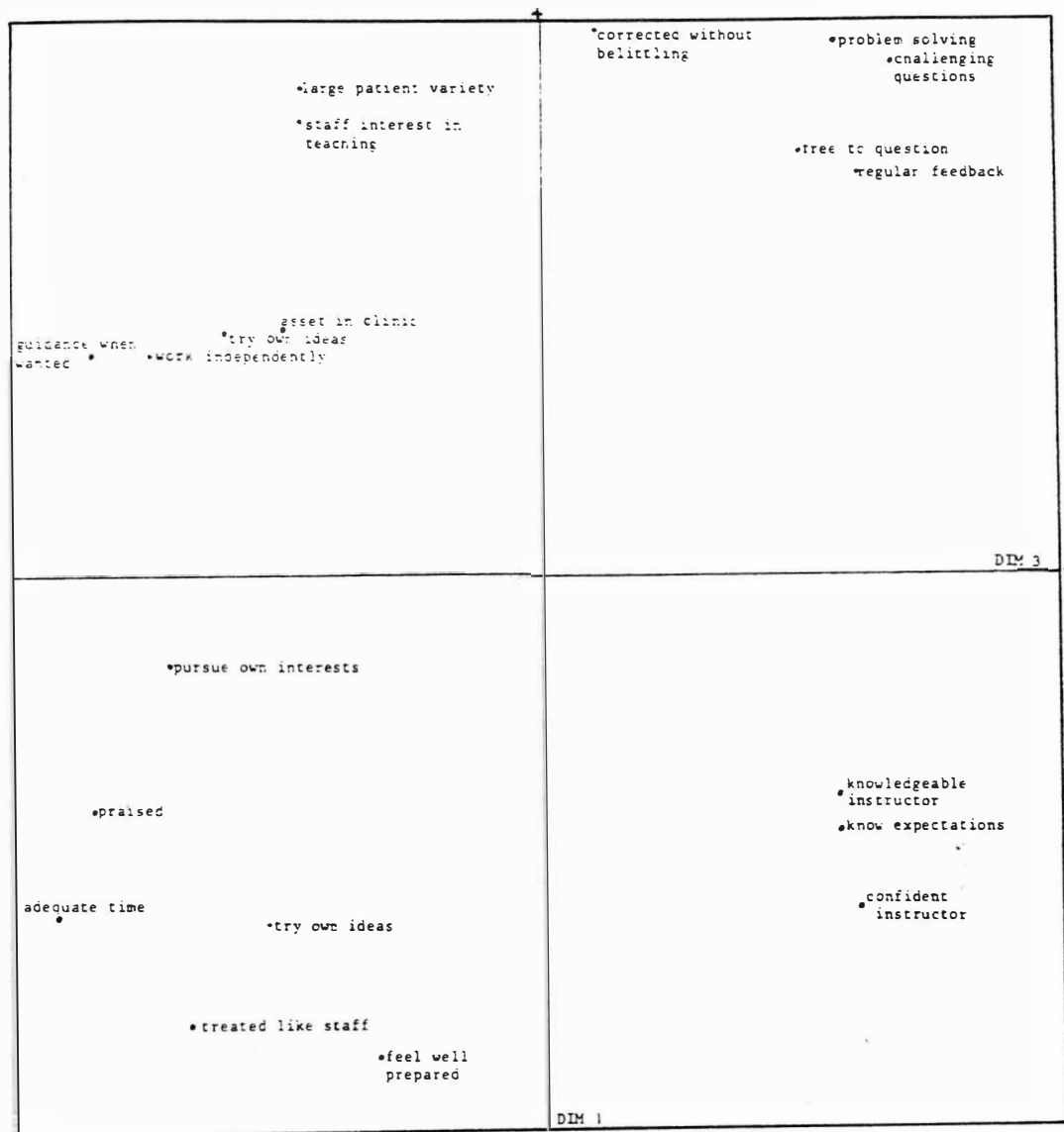


FIGURE 8

## CLUSTER AND DIMENSION INTERPRETATIONS

DIM 1 x DIM 3

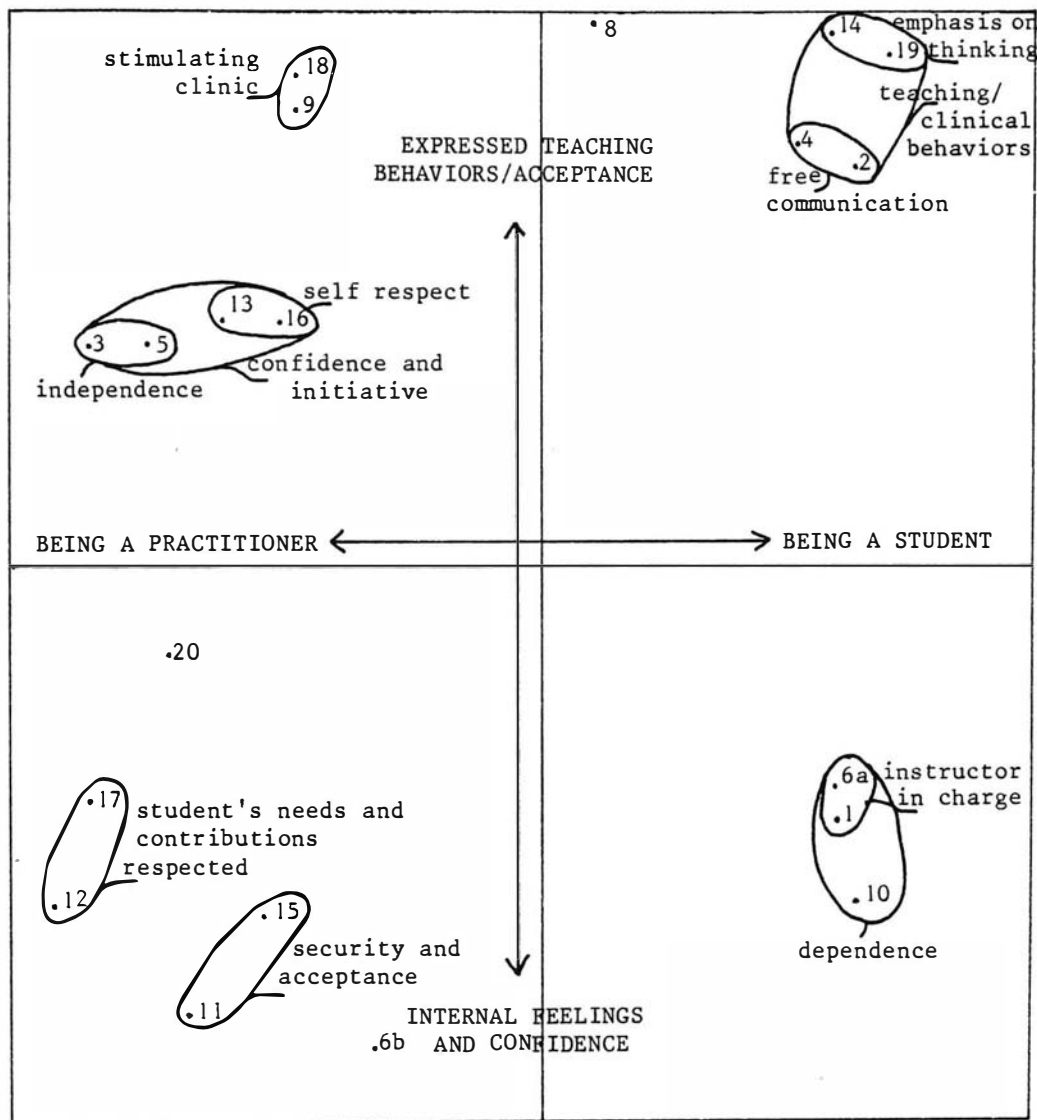


FIGURE 9

## LOCATION OF CLINICAL EDUCATION ITEMS

DIM 2 x DIM 3

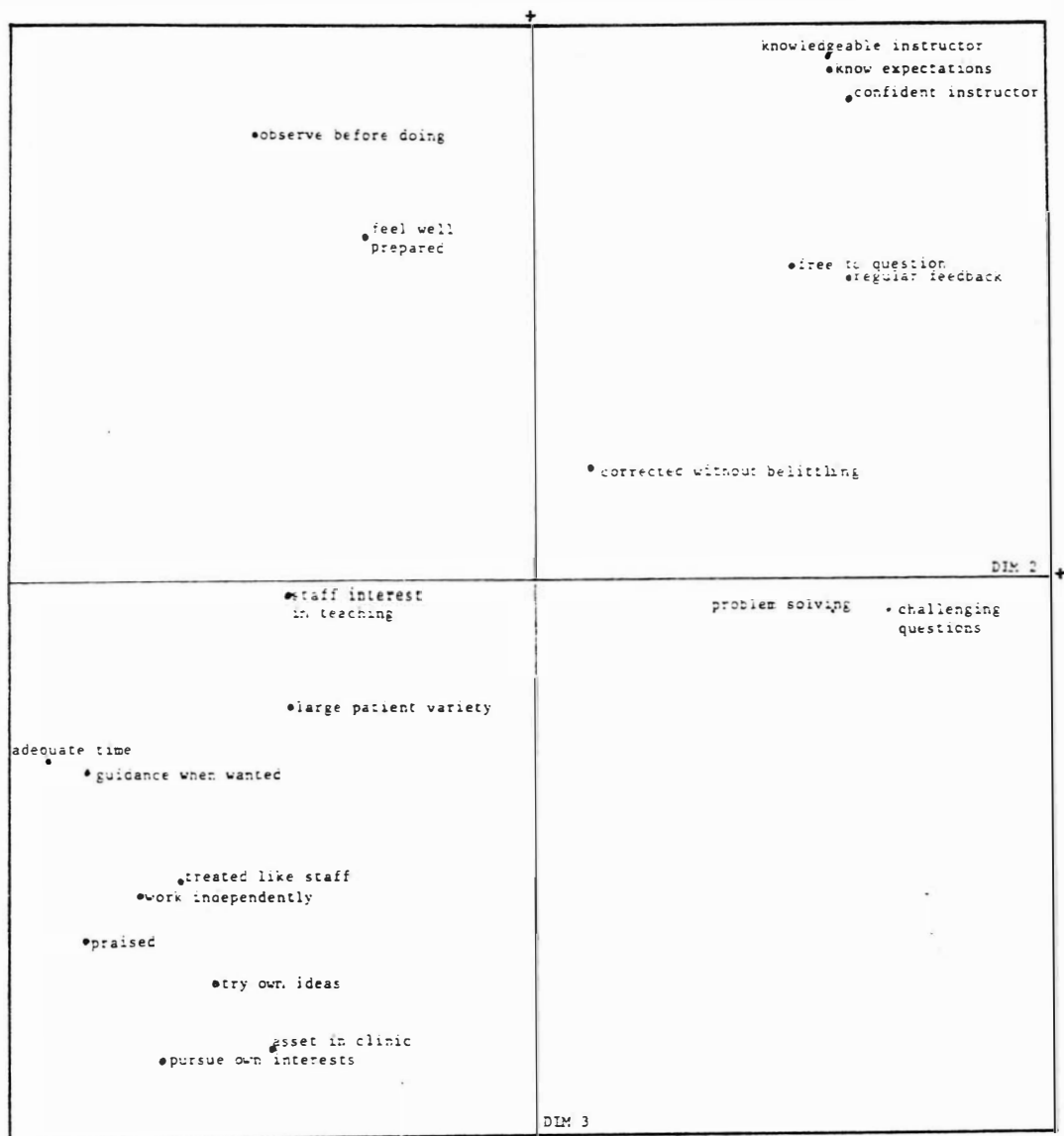
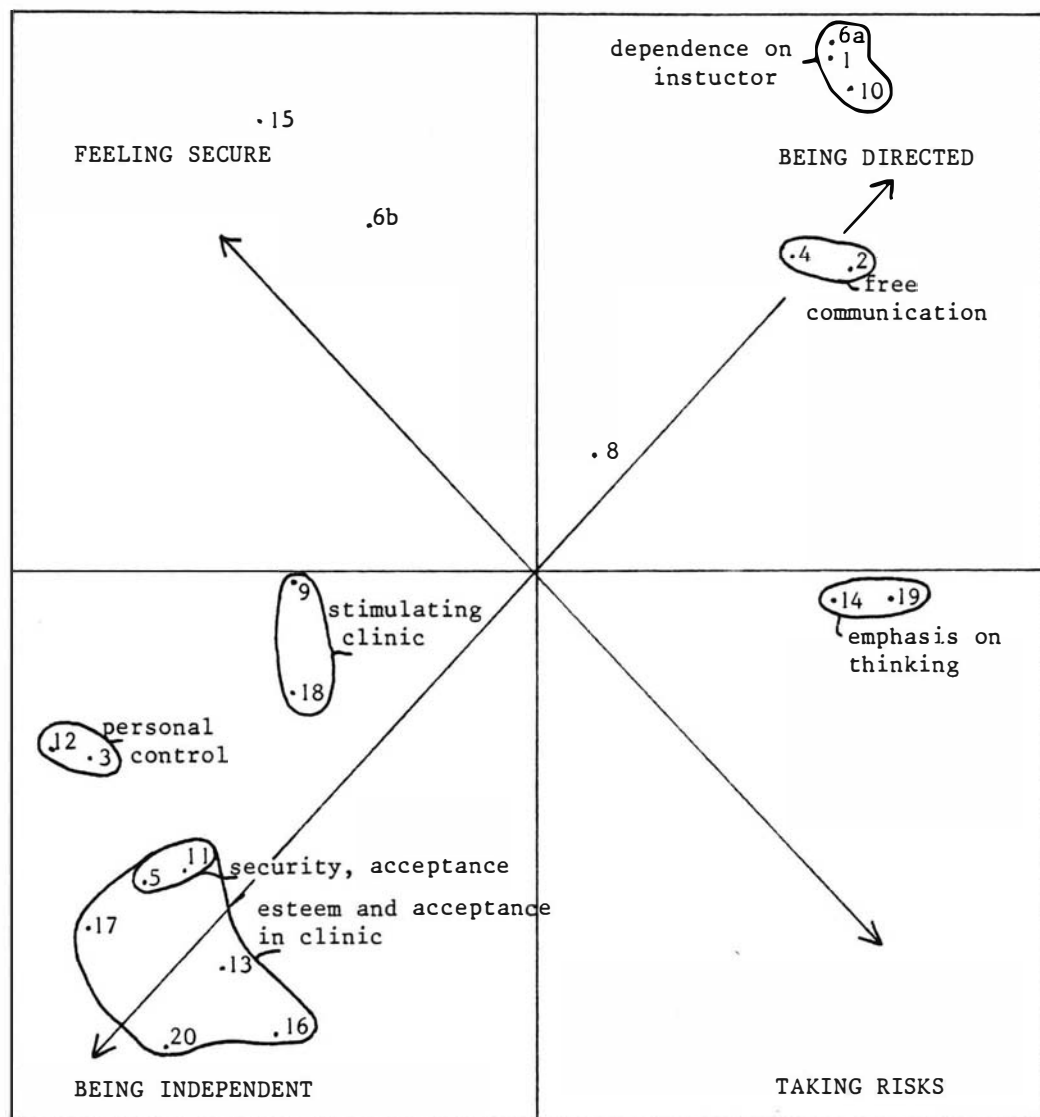


FIGURE 10  
 CLUSTER AND DIMENSION INTERPRETATIONS  
 DIM 2 x DIM 3



Properties of proximities can also be interpreted by examining lines drawn between stimuli. In Figure 5, there appear to be two bipolar attributes created by the plotting of data in two dimensions: active versus passive behaviors and professional esteem or confidence versus a need for reassurance and communication. These are rather broad interpretations and, rather than identifying two different categories, simply identify a progression in the intensity of one behavior. To allow the reader to visualize the clusters and polar attributes for Figure 5, this figure has been redrawn as Figure 6 with only clusters and attributes identified.

Similar methods were used to interpret dim 1 versus dim 3 in Figures 7 and 8, and dim 2 versus dim 3 in Figures 9 and 10. Clusters and linear properties identified in dim 1 versus dim 3 are related to being a student or being a practitioner, teaching behaviors, communication, and security. Dim 2 versus dim 3, presented in Figures 9 and 10, reveal properties related to being directed or being independent, feeling secure or taking risks.

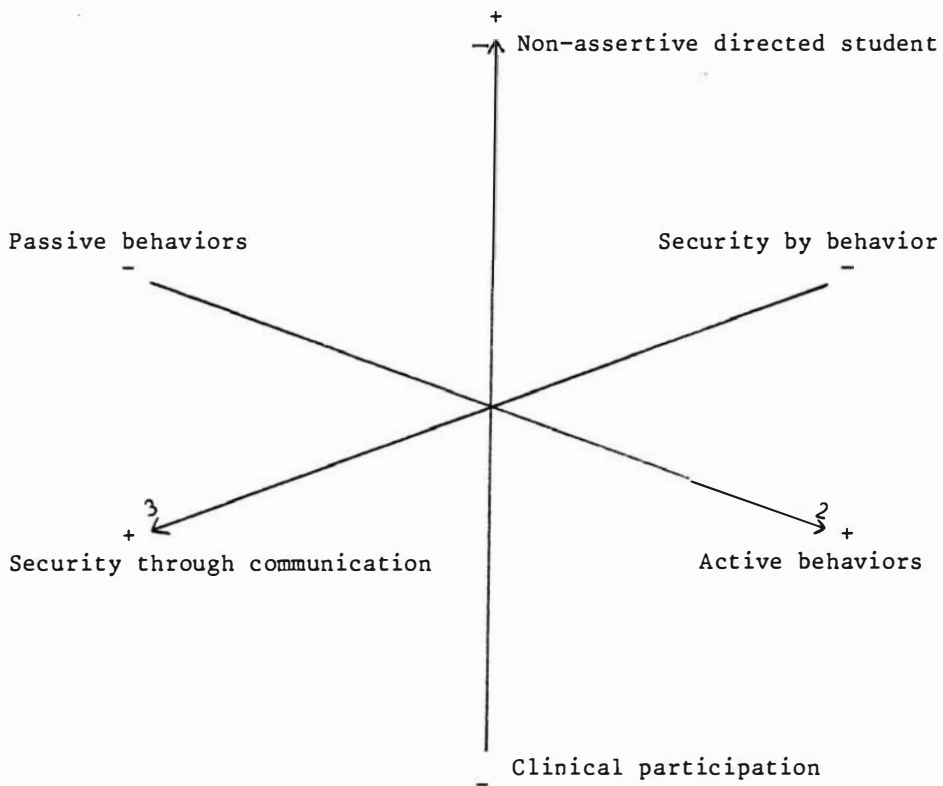
After examining the interpretations in Figures 6, 8, and 10, a number of similarities and differences can be identified. There seem to be clusters along dimensions related to feelings of security and confidence (passive behaviors) opposite clusters related to functioning autonomously and taking the risks associated with exploring interests and demonstrating knowledge and skills (active behaviors). Now, returning to the three dimensional graph depicted in Figure 4, more definite proximity clusters as well as isolated behaviors can be located. These are numbered with their original designation and the rank order number is in parentheses:

<u>Cluster</u>	<u>Relationship</u>
6-regular feedback(2) 8-free to ask questions(4) + 11-corrected without belittling(8) + 13-asked challenging questions(19) 9-emphasis on problem solving(14)	communication: nonthreatening and reassuring towards challenging; student asks vs. student tells
17-staff interested in teaching(9) 1-large variety of patients(18)	challenging clinical characteristics
18-try own ideas(13) 14-asset in clinic(16) 10-work independently(5) 15-guidance when wanted(3)	student has self confidence and initiative, feels secure
20-pursue own interests(20)	feels secure, challenges self
16-praised(17)	feels esteem and respect
4-adequate time to treat(12) 7-treated like staff(11)	needs respected, security
5-observe before doing(15) 19-feel well prepared(6b)	student needs to feel self confident, secure, not threatened
2-confident, secure instructor(10) 12-knowledgeable instructor(6a) 3-know expectations(1)	instructor is respected, directive towards student, nonthreatening

Directional dimensions might be describing preferences of being a non-assertive directed student towards being more of an active participant and peer in the clinic in the first dimension; passive versus active behaviors in the second; and security through communication versus security demonstrated by behavior in the third dimension. Figure 11 contains only the lines describing these dimensions with their interpretations (drawn from Figure 4).

The proximities and dimensions are not distinct and risk being the product of the investigator's imagination rather than true categories due to a strong temptation to try and find singular explanations and

FIGURE 11  
INTERPRETATIONS OF THE THREE DIMENSIONS



meaningful directions. In retrospect, some of the clinical education characteristics were perhaps stated indiscreetly, containing too much information to be categorized simply. For example, "having mistakes corrected without feeling belittled" implies that the student makes mistakes, wants them corrected, does not want to be humiliated, and accepts being observed. Other behaviors, such as those related to the technical aspects of physical therapy could have been included in the list as well.

The original intent of trying to identify differences between students in how they rank ordered the list of clinical education methods and behaviors appears foiled by the fact that most of the students were clumped in a small area near the intersection of the dimensions in a slightly positive direction. Thus, referring to Figure 11, the students approach behaviors which are non-assertive, secure through communication, and active. This corresponds to the rank ordering where knowing expectations, receiving regular feedback and guidance when wanted were more important, on the average, than pursuing personal interests, being asked challenging questions, and having a large variety of patients.

Fourteen students were placed small distances from the rest of the group in the multidimensional space although no other distinct clusters could be identified. To determine if there were any statistically significant effects of the FIRO-B scores, multivariate analysis of variance and canonical correlations were performed. Results are presented in Table 6 and 7. None of these demonstrated significant relationships between how the students rank ordered the clinical education methods and behaviors and the interpersonal needs measured by



Table 6

Multiple Analysis of Variance for MDS  
Dimension Coordinates and FIRO-B Scores

For Dimension 1

Source	Degrees of Freedom	Type IV Sums of Squares	F Value	Probability F
Expressed Inclusion	1	0.0740	0.85	0.3642
Wanted Inclusion	1	0.0011	0.01	0.9102
Expressed Control	1	0.0721	0.83	0.3706
Wanted Control	1	0.0587	0.68	0.4182
Expressed Affection	1	0.1167	1.34	0.2567
Wanted Affection	1	0.0398	0.46	0.5041

For Dimension 2

Source	Degrees of Freedom	Type IV Sums of Squares	F Value	Probability F
Expressed Inclusion	1	0.0000	0.00	0.9988
Wanted Inclusion	1	0.0892	0.55	0.4649
Expressed Control	1	0.3269	2.02	0.1672
Wanted Control	1	0.0000	0.00	0.9978
Expressed Affection	1	0.1042	0.64	0.4298
Wanted Affection	1	0.1718	1.06	0.3125

For Dimension 3

Source	Degrees of Freedom	Type IV Sums of Squares	F Value	Probability F
Expressed Inclusion	1	0.0036	0.02	0.8854
Wanted Inclusion	1	0.0113	0.07	0.7974
Expressed Control	1	0.0159	0.09	0.7608
Wanted Control	1	0.0044	0.03	0.8726
Expressed Affection	1	0.2651	1.57	0.2207
Wanted Affection	1	0.2056	1.22	0.2793

Table 7

Canonical Correlations of the Variables  
MDS Dimension Coordinates and the FIRO-B Scores

	Canonical Correlation	F Statistic	Numerator Degrees of Freedom	Denominator Degrees of Freedom	Probability F
1	.6186	1.2206	18	71.196	0.2692
2	.4271	0.7769	10	52	0.6502
3	.2725	0.4512	4	27	0.7068

the FIRO-B. Thus, the manner by which the students ranked the characteristics cannot be explained by the data collected.

### Summary and Conclusions

Results of students scores on the FIRO-B, their rank ordered preferences for clinical education methods and behaviors, and multidimensional scaling procedures which placed the students in a space according to the rank ordered data have been presented. The original problem stimulating the study was to determine if the FIRO-B could be a useful tool to help identify student's interpersonal needs and thus match them in compatible clinical learning settings. Statistical tests revealed no significant relationships between the personality test and how the students ranked the clinical education methods; therefore, both research hypotheses were not supported. This provides evidence that the FIRO-B would not be useful when assigning students to clinical affiliations.

Originally, the clinical education methods and behaviors were selected because they were all considered to be important factors to students in clinical education. The relative importance, or lack of it, cannot be reflected by ranked data and there may also be other factors which students consider important. The experience of this investigator is that the personalities of both the student and the clinical instructor are crucial to their relationship and the student's ability to learn and perform in the clinic. The FIRO-B might be a useful tool for examining this person-to-person interaction rather than the person-to-situation relationship as studied here. The study by Lobitz & Shepard (1983) used the FIRO-B to investigate the compatibility of physical therapists and patients and the achievement of treatment

goals; studies of compatibility between students and instructors and its effect on learning or satisfaction might be of value in guiding clinical assignments.

The results of the multidimensional scaling procedures were useful in examining similarities between clinical education behaviors. Although there were differences in how the students rank ordered these behaviors which could not be explained by the data collected, the clinical education methods and behaviors did seem to fall into categories of active to passive behaviors, being directed or asserting oneself professionally, and security evidenced through needs for communication. The original list given the students to be ranked was rather poorly designed and only trends could be suggested.

Despite the results of the MDS procedures in this study, MDS appears to have useful applications in the field of physical therapy. Studies in education could be formulated to help in course planning by identifying areas in a curriculum which are similar. The recent trend towards specialization in physical therapy has created different groups of people working towards defining their own unique scope of practice; MDS might be applied to identify discreet similarities and differences in the general and specialized practice of physical therapy. Patient problems seen commonly by physical therapists could be analyzed for possible streamlined and improved care. Although somewhat complicated to design, MDS studies are elegant and interpretable and should be considered for physical therapy research.

While enjoying analyzing the MDS results, this investigator found that the most interesting results of this study were the student FIRO-B profiles. Studies of different occupational groups reported by

Schutz (1978) suggest that people in professions requiring much contact with other adults have higher norms in the FIRO-B scores than people in more introverted occupations who generally have lower norms. Table 8 reproduces the means on the FIRO-B for some of the groups reported by Schutz (1978) as well as from some other studies. This group of physical therapy students had relatively high scores in affection and inclusion and low scores in control. A key word in Schutz's description above may be adult--many people enter the field of physical therapy with the desire to work with children and it is not known whether this could be related to low control scores. Also, the norms for high contact occupations reported by Schutz were for occupations that were largely male-dominated such as traveling salesmen and business school graduates. The group in his report most closely similar to the physical therapy students were female high-school students; Patterson et al's (1970) group of occupational therapy sophomores were also relatively similar to the individuals in this sample. Therefore, there may be effects of occupational choice, sex, and age on a person's or group's FIRO-B scores.

Although Schutz suggested that the FIRO-B measures stable traits, this measurement tool has been used to evaluate changes following some form of imposition such as a human relations workshop or group process class. This type of research predicted that FIRO-B scores would change as a result of interaction. The stability studies reported by Schutz are fairly small and more research is needed to determine the effects of time and other interventions.

The physical therapy students in this study were, for the majority, young and female. The group demonstrated high inclusion and affection

Table 8

Comparison of FIRO-B Scores Among Different Groups

GROUP*	MEAN SCORES (STANDARD DEVIATION)					
	INCLUSION		CONTROL		AFFECTION	
	expressed	wanted	expressed	wanted	expressed	wanted
A.	5.8 (1.7)	4.9 (3.2)	2.0 (2.3)	2.5 (2.0)	5.1 (2.1)	6.2 (2.2)
B.	4.2 (1.2)	1.6 (1.9)	5.8 (1.2)	5.5 (1.8)	2.9 (1.3)	2.2 (1.4)
C.	4.8 (1.3)	2.9 (2.0)	6.4 (0.8)	6.4 (1.4)	3.4 (1.4)	2.6 (1.8)
D.	5.9 (1.9)	5.3 (3.3)	2.1 (1.8)	4.7 (2.0)	4.3 (2.3)	5.0 (2.4)
E.	6.4 (1.9)	7.0 (2.1)	5.6 (2.0)	4.4 (2.2)	6.1 (2.3)	6.9 (1.9)
F.	5.6 (2.1)	6.2 (3.1)	5.5 (2.3)	4.9 (2.1)	4.1 (2.3)	5.2 (2.2)
G.	2.7 (1.8)	1.7 (2.2)	5.4 (2.7)	3.1 (2.0)	2.6 (2.0)	4.4 (2.5)
H.	4.9 (2.0)	4.9 (3.4)	1.9 (1.8)	3.1 (2.0)	4.4 (2.6)	5.0 (2.5)

\*Key for Group designation:

- A. Current Study
- B. Physical Therapy Juniors (Dietrich, et al, 1977)
- C. Physical Therapy Seniors (Dietrich, et al, 1977)
- D. Occupational Therapy sophomores (Patterson, et al, 1970)
- E. Traveling Salesmen (Schutz, 1978)
- F. Harvard Business School Graduates (Schutz, 1978)
- G. Creative Architects (Schutz, 1978)
- H. Female High School Students (Schutz, 1978)

and low control needs which is in contrast to Dietrich et al's (1977) reported scores for physical therapy students at a northeastern university who had much lower wanted inclusion, wanted and expressed affection scores and higher control scores. At present it is not known whether any of these scores are normative for physical therapy, which is a profession largely young and female (American Physical Therapy Association, 1982). There may be some effect of regional differences or professional immaturity and insecurity in this sample of people who are supposedly ready to enter the field of physical therapy but have not yet had the opportunity to function autonomously and have had very limited experience in actual patient care. Studies should be completed to examine if there is an occupational norm for physical therapy and if scores are stable for the duration of a student's education and over a period of time in professional practice.

When the average student described by the mean values on the FIRO-B obtained for the sample was ignored and the students were classified using Ryan's system, there were 26 different combinations of personality types in the sample. Twenty-three students were in one category of control. Ryan stated that people in this control category could exhibit passive-aggressive behavior if they also had high wanted affection scores. Thirteen students, or 38 percent of the sample, had scores that fit this description. This could have important implications for the profession of physical therapy which is struggling to assert its independence and be recognized and respected for its unique talents and contributions in the health care field. If the traits measured by the FIRO-B in this sample are stable and normative, a large proportion of people entering the profession of physical therapy

may be resistant to authority as well as to assuming responsibility and may be undermining drives others are making towards being more autonomous and decisive in health care delivery. If this is true, recruitment and admissions practices should be examined to see if individuals incapable of assisting and supporting professional advancement are being drawn into physical therapy. The FIRO-B may be of some value in admissions processes. At risk here, though, is the potential of an individual being labeled and judged on a paper and pencil test rather than on actual abilities and performance.

Some specific suggestions for further research include:

1. Administering the FIRO-B to students from pre-admission through graduation and beyond to evaluate stability of the scores, success within an academic program and commitment to or type of practice the graduate pursues.
2. Comparing FIRO-B scores of students admitted or rejected to physical therapy programs.
3. Examining regional, sex, age, type and years in practice differences in physical therapists' FIRO-B scores.
4. Comparing the FIRO-B scores of physical therapists held in high professional esteem with those having lesser reputations. Identifying therapists with poor reputations might be difficult and a study of this nature might look at job satisfaction and professional advancement rather than reputation.
5. Studies could be conducted to determine if passive-aggressive or inappropriate behaviors identified in students or therapists are confirmed by their FIRO-B scores and if changes can be effected in those identified.



Although this study did not find any statistically significant results, the descriptive results of the multidimensional scaling procedures did reveal apparent factors in clinical education which could be studied further and the personality test results for this sample of physical therapy students revealed some interesting similarities and differences which could have implications for the profession. This investigator hopes that the study has stimulated interest in continued research.

## CHAPTER V

### PUBLISHABLE ARTICLE

#### FIRO-B PROFILES OF GRADUATING PHYSICAL THERAPY STUDENTS: A METHOD FOR EXAMINING INTERPERSONAL NEEDS

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## ABSTRACT

The purpose of this study was to examine the interpersonal needs profiles of a sample of physical therapy students. Thirty-four students who had completed all academic and clinical requirements of an educational program agreed to serve as subjects for the study. The Fundamental Interpersonal Relations Orientation - Behavior (FIRO-B), which measures the amount of inclusion, affection, and control that an individual wants to express or receive, was used to measure the students' interpersonal needs. The sample demonstrated high needs in giving and receiving inclusion and affection, and low needs in giving and receiving control. Categorizing the students using their combined expressed-wanted scores in each of the three needs areas resulted in 26 different combinations of personality types, however 68 percent of the sample were placed in one category in the control dimension. The implications of these results were discussed in relation to the profession's drive towards professional autonomy, the educational program, and the socialization process of physical therapy.

## INTRODUCTION

In recent years, the leadership of the American Physical Therapy Association (APTA) has recommended that the profession develop increased autonomy of practice.<sup>1</sup> Evidence that physical therapists are becoming more autonomous can be found in recent legislation in some states which permit independent evaluation and/or practice, pursuit of hospital privileges by physical therapists,<sup>2</sup> and an increased percentage of therapists who are self-employed.<sup>3</sup> Despite these changes, the majority of physical therapists are salaried employees who legally must work under the direction of physicians. Gaining independence of practice will be the result of individuals unifying to strive towards this goal and success will depend on their commitment and their ability to be advocates for professional competence and expertise.

An inherent feature of physical therapy practice is the necessity for effective communication and interaction with patients, peers, other health professionals, and the public. Skills in interpersonal relations will be required for therapists to work towards the goal of autonomous practice. Yarbrough has stated that the outlook and values of the profession are shaped by the educational programs.<sup>4</sup> Currently, educational programs place almost overwhelming demands on students with the volume of information to be learned in the time provided. Periods of intensive coursework are followed by relatively brief periods of clinical education during which students learn to apply their knowledge. While students have traditionally been evaluated in their didactic and clinical knowledge and skills, assessing their attitudes and interpersonal qualities has been difficult. Once students graduate and become licensed, they have the same basic rights and responsibilities as

experienced therapists. In addition to possessing general knowledge and skills in the application of physical therapy, they need to be able to join with their colleagues and be a positive force working towards professional advancement.

The purpose of this paper is to present one method which was used to formulate a descriptive profile of the interpersonal needs of one group of students who had just completed all of the educational requirements in a physical therapy program. These interpersonal needs, measured by the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B), can be related to skills believed to be necessary for decision-making and autonomous practice. The results may have implications for admissions policies, curricular design, and the socialization process of physical therapy which should be considered given the current drive towards more independent practice.

Attitudes and personality characteristics of potential and enrolled physical therapy students have previously been studied.<sup>5-8</sup> With one exception,<sup>8</sup> these studies all examined students as a group, reporting on mean or average scores. Various findings of these studies were that individuals who wanted to become therapists had the desire to interact with and help people, were socially self confident, and gave increasing importance to economic return as they progressed through their education. Prestige, business responsibilities, and creativity were relatively unimportant to physical therapy students. While group characteristics have value in describing different professions or student populations, qualities of individuals may be different from the group mean scores. The method used to describe the students in the sample studied here allows for both group and individual analysis.

## METHOD

### Sample and Data Collection

All students from one physical therapy program who had successfully completed the academic and clinical requirements within the standard time period were requested to participate in the study. The students had just completed four months of clinical education in different facilities across the nation. The academic institution was a state-supported university located in the Southeast which has competitive admissions for its two year program leading to a baccalaureate degree. Thirty four students (100%) voluntarily agreed to participate in the study and signed consent forms. Data were collected in one session within one week following the student's final clinical affiliation.

### Questionnaire

The FIRO-B scale developed by Schutz was the instrument selected to gather information about the sample.<sup>9</sup> This 54-item questionnaire measures three dimensions of interpersonal needs: inclusion, affection, and control. Schutz postulated that all individuals have these three interpersonal needs and that these needs constituted a sufficient set of behavioral areas for the prediction and explanation of human behavior.<sup>9</sup> Schutz further defined these needs as the amount of each trait one wants from others and the amount one expresses towards others. Inclusion refers to the amount a person associates with others and wants others to associate with him; affection reflects the amount of intimacy and emotional involvement one wants from others or expresses; and control is defined as the amount of responsibility, decision-making, and power one wants to receive or express.<sup>9</sup> The questionnaire can be

completed within 15 minutes and provides six scores for each subject.

#### Data Analysis

Descriptive statistics were used to describe the sample in terms of age, sex, and years of education. Means and standard deviations of the six FIRO-B scores were computed and the sample was described using the format for interpretation devised by Ryan.<sup>10</sup>

### RESULTS

#### Demographic Data

Of the 34 subjects who completed the questionnaires, 30 (88%) were women and 4 (12%) were men. Although one of the requirements for admission into the physical therapy program was two years of college, 12 (35%) students had completed more than two years of college and 5 (15%) students had a baccalaureate degree. The ages of the subjects ranged from 21 to 27 years with a mean age of 22.8 years.

#### FIRO-B Analysis

The means and standard deviations of the sample for each of the six scales of the FIRO-B, expressed and wanted inclusion, affection, and control, are presented in the Table. The score for each of the six variables can range from 0 to 9, with a low score indicating a low need for that behavior and a high score reflecting a strong need. Ryan interpreted each of the scores in terms of its intensity, with 0 to 1 as extremely low and indicating a compulsive avoidance of the measured behavior; 2 to 3 as low, meaning the characteristic low need would be noticeable; 4 to 5 were considered moderate with the individual demonstrating a tendency for either low or high scoring behavior; 6 to 7 were high, the person would noticeably show the characteristic; and scores of 8 to 9 were extremely high, meaning there would be a

compulsive expression for the behavior.<sup>10</sup> Ryan further formulated characterizations for individuals based on their combinations of expressed and wanted scores in each of the three need areas. Thus, he described 8 different personality types in the areas of inclusion, 9 in affection, and 10 in control.

When the sample was examined as a group, the mean scores demonstrated that they had moderate needs in terms of expressed and wanted inclusion and affection, and low needs in both aspects of control. Individual subject scores in each of the dimensions covered the entire range with the exception of expressed inclusion and affection when no subject had a score less than 2 and wanted control where the highest score was 8. Using Ryan's schema of interpretation, the student described by the mean could be characterized as an individual who presented an image of gregariousness with well developed social and conversational skills, was capable of giving and receiving reasonable amounts of affection, and who avoided making decisions while not wanting control from others. However, in two of the three interpersonal dimensions, inclusion and affection, the distribution of the subjects into different categories as described by Ryan indicated substantial variability and these results deserve further attention.

Inclusion. Combining the expressed and wanted scores in the area of inclusion resulted in eight different categorizations. The frequency distributions for the sample in these categories are presented in the Figure. The largest number of subjects, 11, had both high expressed and wanted inclusion scores. This, according to Ryan, is indicative of people who are somewhat compulsively driven towards others and find being alone rather difficult. The next largest number of subjects, 9,



with moderate to high expressed and low wanted needs in inclusion, could be described as people skilled at socializing but without a strong need to constantly be with others and somewhat selective about with whom they choose to spend time. The rest of the subjects were distributed in seven other categories. Of interest is that only four subjects in the sample had scores that fit the category described by the means of 5.76 for expressed and 4.91 for wanted inclusion. Scores for the male students tended to be similar to those of the females, although none of the males were in the high-high category.

Affection. Figure 2 represents the distribution of the students in the categorizations described by Ryan for the combined scores for affection needs. Ten students, described as capable of giving and receiving affection in a realistic and practical manner, had scores in this dimension congruent with the means of 5.06 and 6.15. Another 10 had high or extremely high scores indicating an intense desire to be shown affection as well as initiating close relationships with others. Seven subjects had low expressed affection with high wanted scores; characterized by Ryan as being defensive, wanting others to take the responsibility for beginning relationships, and then needing constant reassurance that they are liked. The remainder of the students in the sample were distributed, by themselves or in pairs, among the other descriptive groups. The men in the sample did not tend to group in any particular category.

Control. While the students were placed into a variety of groups in the inclusion and affection dimension, over two-thirds of the sample were grouped in one category of control which was encompassed by the mean scores of 2.03 for expressed and 2.50 for wanted control. These low or

extremely low scores are indicative of people who may have doubts about handling new areas of responsibility, resist being pushed, and want to be certain about what they are doing in order to avoid feeling like fools. Ryan further stated that these people may have good potential for leadership but need to move into new experiences and responsibilities at their own speed. If stressed, individuals having this combination of control scores and a high wanted affection score may use passive-aggressive defenses rather than demonstrate open hostility or other coping mechanisms. Thirteen of the 23 students who had low control scores also had high wanted affection scores indicating a possible proclivity for this behavior. The 11 students not scoring in the category described by low control needs were distributed in six other descriptive categories. Of these others, six had low expressed control scores with either moderate or high wanted scores. These combinations could mean that the person is either dependent on others to make decisions or, in the case of females, tolerant of others assuming control rather than desirous of it. Only one male student scored low in expressed control; he also had a low wanted score in this dimension.

## DISCUSSION

When the description for the average student circumscribed by the mean scores on the FIRO-B was ignored and the students were classified using Ryan's system, there were 26 different combinations of personality types in the group. Twenty-three students were in one category of control, a category characterized by low needs for independent decision making and responsibility, and possible resistance to authority. Only one student fit the characterization described by the mean scores in the three need areas. Since the FIRO-B was administered only once, the

stability of the scores is unknown and it cannot be determined whether the results are peculiar to regional social customs, the educational program, their admissions policies, the clinical education phase of their education, or some combination of factors.

Schutz suggested that different occupational groups have characteristic profiles on the FIRO-B.<sup>11</sup> People in professions that require much contact with other adults tend to have higher mean scores in all dimensions than those in more introverted occupations. The group of physical therapy students in this sample had relatively high scores in inclusion and affection and low scores in control. This would tend to indicate that they are extroverted in their social relationships with others, but prefer to be relatively independent, neither exerting nor receiving much control. Since this group had just finished their educational requirements, their FIRO-B scores may reflect a lack of confidence due to professional inexperience as well as a desire to be free of their subordinate status as students.

FIRO-B scores obtained from physical therapy students at a program located in the Northeast are different from those in the sample in this study.<sup>6</sup> The mean scores for their group of senior students demonstrated relatively high scores in both dimensions of control, moderate expressed affection, and relatively low scores in wanted affection and both aspects of inclusion. Ryan would describe an individual with this combination of scores as someone who is capable of assuming responsibility and making decisions, but democratically likes to share responsibility; probably skilled at socializing, but also selective about relationships; and very cautious about becoming emotionally involved with others.<sup>10</sup> This lesser emphasis on being

accepted and liked combined with a stronger need to assume and accept responsibility may be the result of regional differences between southern and northern student groups. Traditionally, it has been accepted and expected from women in the South to display non-assertive and deferential behavior. But, given that the Northern study reported only mean scores on the FIRO-B, there may also be a large variety of personality combinations within that group.

Personality characteristics of physical therapists may be an important factor in their job satisfaction and potential for professional autonomy. Yarbrough completed an ethnographic study of a group of physical therapists in one department at a Southern community hospital.<sup>4</sup> She found that staff members were often disillusioned and frustrated with their work due to outside constraints. Dominance by physicians was a major problem for the therapists who felt they were deprived of decision-making in patient care. This conflicted with the values they had been taught in school. They lacked skills in assertion of their knowledge and training. Resistance to physician dominance was displayed with anger or hostility, usually not expressed directly to physicians but rather subtly through patients or non-compliance with prescriptive orders. Bourne, a psychotherapist with the Tavistock Clinic in London, reported on a series of seminars conducted with 10 British female physical therapists which addressed their intrapersonal and interpersonal tensions and problems.<sup>12</sup> He found that the therapists' overriding complaints included restrictions of their independence within the hospital social structure and their subservience to physicians. While expressing hostility over this oppression, the therapists were nevertheless ready and willing to relinquish power to

someone they perceived as being in a more dominant position. The findings of Yarbrough and Bourne suggest that physical therapists are ill-prepared to cope within the hospital hierarchy in a manner which supports expression of their professional knowledge.

When the FIRO-B descriptive profiles of the physical therapy students in the present study are examined, many of them appear to be prone to perpetuating the problems exhibited by the therapists encountered by Yarbrough and Bourne. Not only do the majority (68%) of them not want to express power over others, they also do not want others to exert power over them. In addition to preferences for low levels of decision-making and control exerted over them, 57 percent of the students in this category also demonstrated a strong need for affection which could result in passive-aggressive behavior if stressed. The educational system which emphasizes the unique expertise and decision-making roles of physical therapists and the hospital political hierarchy which makes the fulfillment of these difficult would seem to foster the development of frustrations and disillusionment in people having these personality profiles.

Yarbrough discussed the socialization process of physical therapists as consisting of three distinct phases.<sup>4</sup> The first, professional education, formally presents the students with the foundations of practice and imbues them with a sense of values for the profession. Clinical education is the second phase where the student, in a subordinate status, gradually assumes increasing responsibilities in patient care. The early years of practice comprise the third phase and it is here where the therapist confronts some realities of the health care system for the first time. During this phase, they may

lack the skill to establish a mutual trust with physicians and other health care professionals and they are unable to assert their autonomy in the complex social structure of the hospital. Again, the personality profiles of the students in this sample who had completed the first two phases of their development as physical therapists demonstrate that many of them do not seem to be prepared to assume the roles of autonomous and assertive professionals. Curricular changes which prepare the students to work within the established health care system should be considered to allow the new therapists the ability to realize their full potential during the third phase of their socialization.

#### Recommendations

There is a need to evaluate qualities of people entering the field of physical therapy. While they may successfully complete a rigorous academic program, some appear unable to support and augment the charge by the leadership of the profession to develop into more independent and autonomous practitioners. Relating profiles of applicants and graduates on a personality measure such as the FIRO-B to future performance may have value in determining those who can successfully participate in this struggle for advancement.

#### CONCLUSIONS

The distribution of FIRO-B profiles for the students in this sample is not generalizeable, but the method of determining the profiles can be used with any group. Effective interpersonal relations are a crucial element in the practice of physical therapy. Communicating with patients and peers is important, but the new graduate must also have skills in dealing with others in the health care system. There is some

evidence that a large proportion of students in this sample may not possess the decision-making skills required of independent practice. Teaching these skills is the responsibility of educational programs and the clinical education phase of professional development must be strengthened to provide students the opportunity to make decisions and be more independent than they currently are. Continued research needs to be conducted to assess the qualities of graduates from other programs as well as the performance of individuals entering the profession having different personality profiles.

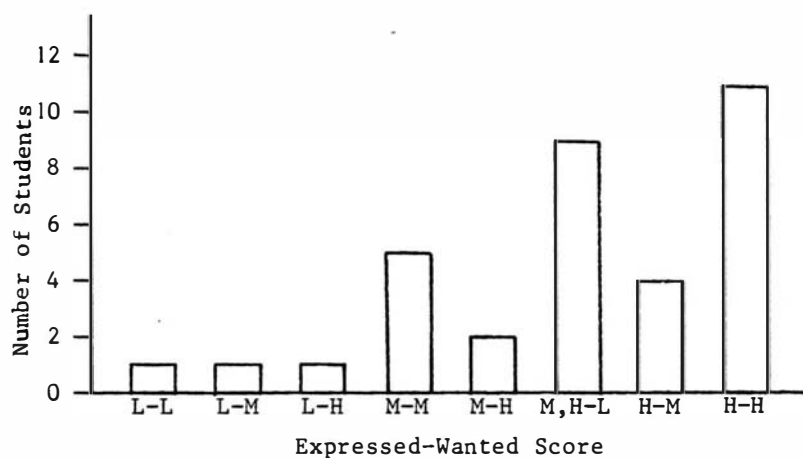
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<u>Area</u>	<u>Range</u>	<u>Mean</u>	<u>Standard Deviation</u>
Inclusion - expressed	2 - 9	5.76	1.69
Inclusion - wanted	0 - 9	4.91	3.21
Control - expressed	0 - 9	2.03	2.30
Control - wanted	0 - 8	2.50	1.97
Affection - expressed	2 - 9	5.06	2.06
Affection - wanted	0 - 9	6.15	2.22

Table. FIRO-B Scores of the Physical Therapy Students



L = low, M = medium, H = high

Figure 1. Distribution of students in categories of combined expressed-wanted scores in Inclusion

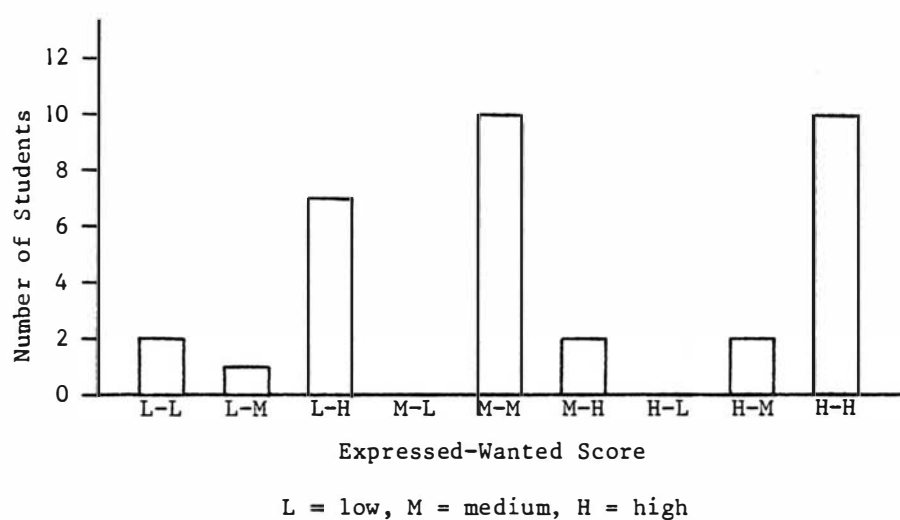


Figure 2. Distribution of students in categories of combined expressed-wanted scores in Affection

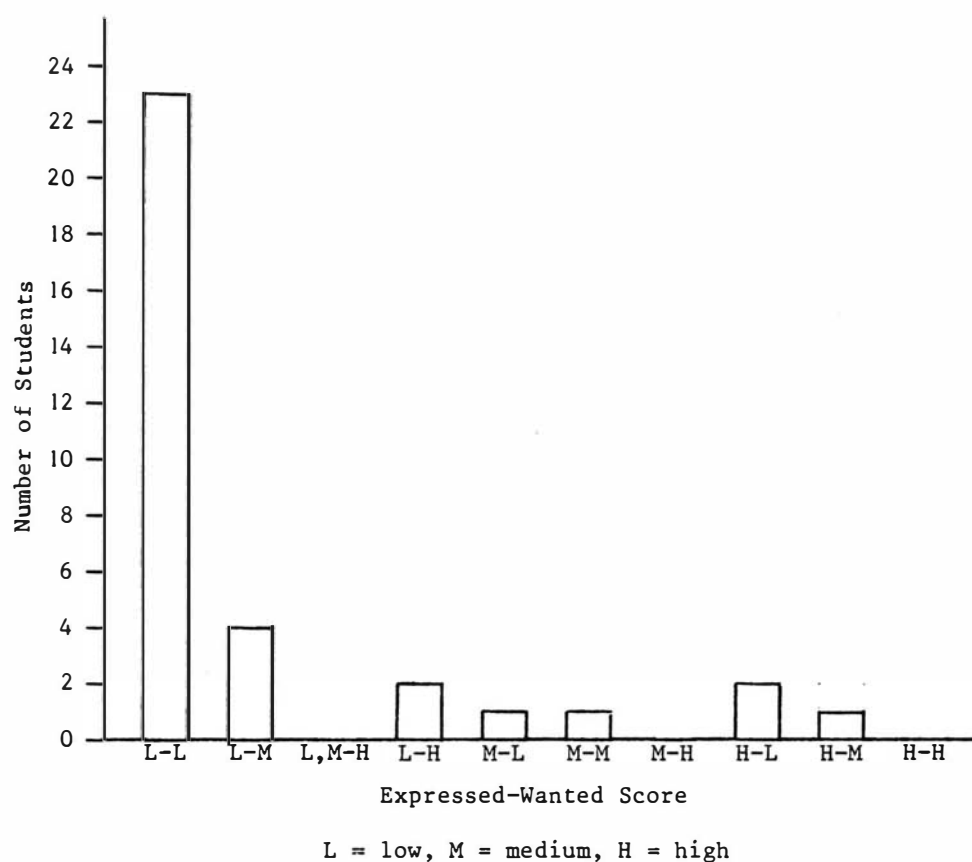


Figure 3. Distribution of students in categories of combined expressed-wanted scores in Control

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## List of References

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## Appendix A

Clinical Education Methods and Behaviors(rank ordered by students)

Having a large variety of patients

Having an instructor who was confident and secure

Knowing what was expected of me

Having adequate time to treat my patients

Observing a treatment or procedure before performing it

Receiving regular feedback on my performance

Being treated like one of the staff

Feeling free to ask questions

Having an emphasis on problem-solving

Being able to work independently

Having my mistakes corrected without feeling belittled

Having a well prepared and knowledgeable instructor

Having challenging questions asked my

Feeling like I was an asset in the clinic

Receiving guidance when I wanted it

Being praised when I did something well

Being with a staff interested in teaching students

Being able to try out my own ideas with patients

Feeling well prepared

Being able to pursue my own interests

## Appendix B

Consent Form

I give my permission to Nora Donohue to include me in a study of interpersonal characteristics of physical therapy students and clinical education methods. I understand that this involves completing a questionnaire, the FIRO-B, and arranging in rank order of preference a list of clinic and instructional behaviors.

I understand that my name will not be used in any report of this study and that all material will be kept confidential. I understand that I may ask questions after completing the study and am free to withdraw from the study at any time.

I understand that the data generated by this research may be used in future projects.

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data

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signature

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witness

## Appendix C

Characterizations of Individuals Based on Expressed-WantedFIRO-B Scores (abstracted from Ryan, 1977)

## Inclusion

1. "Loner" (low-low): highly selective about people they associate with, tend to avoid people, possible concerned about being rejected.
2. "Now You See Him, Now You Don't" (medium to high-low): highly skilled at socializing but selective about whom they associate with.
3. "Conversationalist" (high-medium): present gregarious public image, moderate need to be with people, well-developed social skills.
4. "People Gatherer" (high-high): compulsively driven towards people, outgoing, socialize easily, rarely enjoy being alone.
5. "Inhibited Individual" (low-high): expect others to extend invitations, fear being rejected, important to feel accepted and welcome by others.
6. "Cautious Association" (low-medium): want to belong but tolerate not being accepted by everyone, tend to let others extend invitations to associate.
7. "Hidden Inhibitions" (medium-high): intense need to be accepted, reasonable sociable, sensitive to rejection.
8. "Social Flexibility" (medium-medium): flexible socially, comfortable in groups or alone, not concerned about rejection.

## Affection

1. "Pessimist" (low-low): cautious about involvement, uncomfortable when others get too close, slow to develop trust with relationships.
2. "Optimist" (high-high): comfortable initiating and receiving close relationships, need constant reassurance they are liked, frequently disappointed.
3. "Image of Intimacy" (high-low): present warm and friendly image but selective about who they get close to, behavior sometimes appears superficial.
4. "Image of Intimacy Tendency" (medium-low): public image of friendliness exceeds actual needs.
5. "Living Up to Expectations" (high-medium): realistic seeking of affection, public image exceeds needs.
6. "Cautious Lover" (low-high): defensive, expect others to initiate closeness which they desire, sensitive to rejection.
7. "Careful Moderation" (low-medium): relatively realistic when seeking affection but expect others to initiate relationship.
8. "Cautious Lover in Disguise" (medium-high): express appropriate amounts of affection but expect a large amount from others.
9. "Warm Individual" (medium-medium): give and receive affection without going to extremes, realistic and practical.

## Control

1. "Self Confident" (medium-low): comfortable making decisions, not overbearing, prefer to be left alone with responsibility.
2. "Mission Impossible" (high-low): intense need for recognitions, maintain superiority, drawn to dependent people.
3. "Rebel" (low-low): avoid making decisions and comfortable with others who do not coerce them, may have doubts about their ability, anxious in new areas.
4. "Openly Dependent Person" (low-high): wants (or tolerates) others making decisions, feels inadequate.
5. "Checker" (low-medium): some doubts about their ability, look to others for reassurance.
6. "Loyal Lieutenant" (low-moderately high): prefer to follow policy, fear failure, need authority.
7. "Matcher" (medium-medium): capable of making decisions but like reassurance and sharing responsibility.
8. "Let's Take a Break" (medium-high): willingly assumes responsibility but ready to let others take over, self-indulgent.
9. "Mission Impossible With Narcissistic Tendencies" (high-medium): compulsive need for recognition and responsibility.
10. "Dependent-Independent Conflict" (high-high): rare combination, intense need for recognition which increases with the more they do, unresolved conflict between dependency and responsibility.

Note: High wanted control scores for women may reflect a tolerance for this rather than a need for it.

## Vita

